Geometry **Final revision** prep1

1 Choose the correct answer from the given ones :

1 The sum of the measures of the accumulative angles at a point equals ....

(a) 90° (b) 180° (c) 270° (d) 360°

2 The right angle complements angle whose measure is ....

(a) 0° (b) 45° (c) 90° (d) 180°

3 If $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ lie in the same plane and $\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \varnothing$, then $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are ....

(a) perpendicular. (b) intersecting. (c) coincident. (d) parallel.

4 If $\Delta ABC \equiv \Delta XYZ$ and $m(\angle A) + m(\angle C) = 100°$, then $m(\angle Y) =$ ....

(a) 120° (b) 100° (c) 80° (d) 60°

5 The angle of measure 48° complements an angle of measure ....

(a) 42 (b) 132 (c) 52 (d) 112

6 If the ratio between two supplementary angles is 4 : 5 , then the measure of the greater angle is ....

(a) 80° (b) 100° (c) 120° (d) 150°

7 If the outer sides of two adjacent angles are on the same straight line , then the two angles are ....

(a) parallel. (b) supplementary. (c) equal. (d) complementary.

8 The measure of each angle of two equal complementary angles is ....

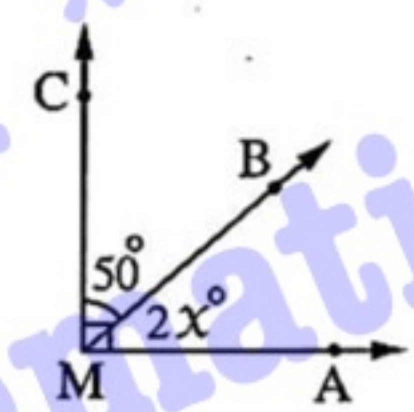
(a) 45° (b) 90° (c) 180° (d) 0°

9 Each two vertically opposite angles are ....

(a) equal in measure (b) complementary (c) supplementary (d) adjacent

10 The two straight lines parallel to third straight line are ....

(a) intersected. (b) perpendicular. (c) equal. (d) parallel.

11	$\overrightarrow{AB} \subset$ .... (a) $\overleftrightarrow{AB}$ (b) $\overline{AB}$ (c) $\overrightarrow{BA}$ (d) AB
12	The angle of measure 120° is .... angle. (a) obtuse (b) right (c) acute (d) reflex
13	If $\Delta XYZ \equiv \Delta ABC$, then XZ = ... (a) BC (b) AB (c) AC (d) XY
14	The angle whose measure is 40° supplements an angle of measure .... (a) 50° (b) 140° (c) 40° (d) 180°
15	**In the opposite figure :** The value of x equals .... (a) 20° (b) 90° (c) 40° (d) 60° 
16	The two angles of measure 140° , 40° are .... (a) complementary. (b) supplementary. (c) adjacent. (d) reflex.
17	If m (∠ A) = 54° and m (∠ B) = 36° , then A and B are .... angles. (a) congruent. (b) adjacent. (c) supplementary. (d) complementary.
18	The sum of the measures of two adjacent angles formed by straight line and ray is .... (a) 90° (b) 180° (c) 270° (d) 360°
19	The acute angle supplements an .... angle. (a) acute (b) obtuse (c) right (d) reflex
20	If ∠ A supplements ∠ B and m (∠ A) = 2 (m ∠ B) , then m ∠ B = ... (a) 90° (b) 120° (c) 60° (d) 180°

21 If $\Delta ABC \equiv \Delta XYZ$, and $m(\angle X) + m(\angle Z) = 140°$, then $m(\angle B) =$ ……………

(a) 140° (b) 220° (c) 120° (d) 40°

22 If $m(\angle A) = 150°$, then m (reflex $\angle A$) = ……………

(a) 210° (b) 150° (c) 30° (d) 360°

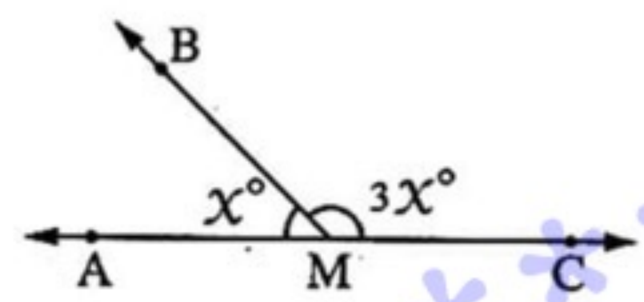
23 The angle of measure 42° complements angle of measure ……………

(a) 42° (b) 138° (c) 48° (d) 318°

24 **In the opposite figure :**

$\overleftrightarrow{AC} \cap \overrightarrow{MB} = \{M\}$,

then $x =$ ……………



(a) 45° (b) 90° (c) 60° (d) 30°

25 The sum of the measures of the accumulative 3 angles at a point …………… the sum of the measures of the accumulative 5 angles at a point.

(a) < (b) > (c) = (d) ≥

26 If $m(\angle X) = 2\, m(\angle Y)$ and $\angle X$ complements $\angle Y$, then $m(\angle Y) =$ ……………

(a) 60° (b) 30° (c) 90° (d) 120°

27 If the vertically opposite angles are complementary , then the measure of each one = ……………

(a) 45° (b) 50° (c) 90° (d) 180°

28 If $\overline{AB} \equiv \overline{CD}$ and AB = 5 cm. , then 2 AB – CD = …………… cm.

(a) 5 (b) zero (c) 15 (d) 10

29 If $\Delta ABC \equiv \Delta XYZ$, then $m(\angle ACB) = m(\angle$ ……………)

(a) ZXY (b) XZY (c) XYZ (d) X

30 The measure of the straight angle equals ……………

(a) 180° (b) 90° (c) 45° (d) 0°

31 The angle of measure 46° vertically opposite to an angle whose measure is ·······

(a) 64° (b) 46° (c) 44° (d) 134°

32 If Δ ABC $\equiv$ Δ XYZ and m ($\angle$ C) = 50° , then m ($\angle$ ··············) = 50°

(a) X (b) Y (c) Z (d) M

33 If the two straight lines are parallel to a third straight line , then these two straight lines are ···············

(a) congruent. (b) intersecting. (c) perpendicular. (d) parallel.

34 The measure of the right angle is ···············

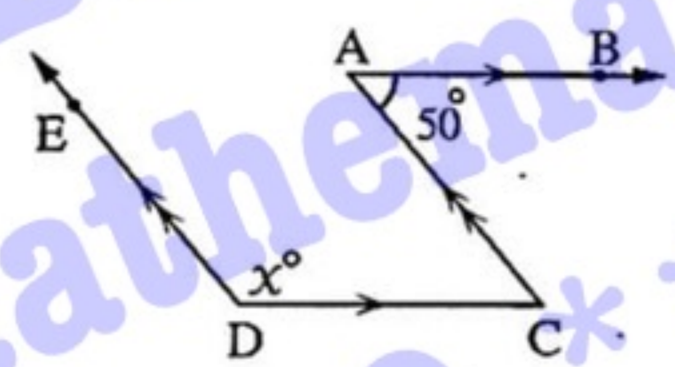
(a) 90° (b) 180° (c) 270° (d) 360°

35 **In the opposite figure :**

the value of x = ···············

(a) 100° (b) 50°

(c) 130° (d) 180°



36 If Δ ABC $\equiv$ Δ XYZ , then YZ = ···············

(a) AB (b) BC (c) AC (d) XY

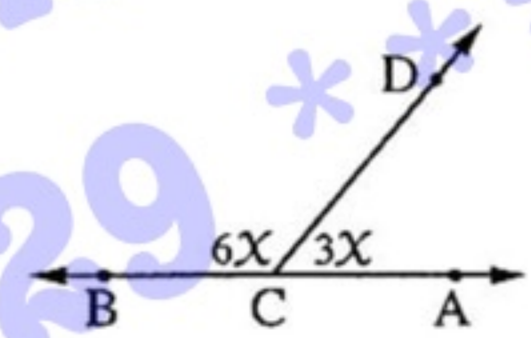
37 If the two adjacent angles are complementary , then their outer sides are ···············

(a) perpendicular. (b) coincident.

(c) on the same straight line. (d) skew.

38 If $L_1 // L_2$ and $L_1 \perp L_3$, then ···············

(a) $L_1 \perp L_2$ (b) $L_1 // L_3$ (c) $L_2 // L_3$ (d) $L_2 \perp L_3$

39	If two straight lines are on the same plane and do not intersect , then they .... (a) skew. (b) perpendicular. (c) parallel. (d) congruent.
40	The two lines which are parallel to a third line are .... (a) perpendicular. (b) parallel. (c) equal. (d) intersect.
41	If $\Delta XYZ \equiv \Delta LMN$, m ($\angle$ X) = 60° and m ($\angle$ N) = 70° , then m ($\angle$ Y) = ... (a) 50° (b) 60° (c) 70° (d) 130°
42	If $\overleftrightarrow{AB} // \overleftrightarrow{XY}$, then $\overleftrightarrow{AB} \cap \overleftrightarrow{XY}$ = ... (a) $\{B\}$ (b) $\overline{AX}$ (c) $\varnothing$ (d) $\{Y\}$
43	The angle whose measure is more than 180° and less than 360° is called .... angle. (a) obtuse. (b) acute. (c) reflex. (d) straight.
44	**In the opposite figure :** If $\overleftrightarrow{AB} \cap \overrightarrow{CD} = \{C\}$, then x = ... (a) 20° (b) 30° (c) 90° (d) 120° 
45	If $\angle$ A , $\angle$ B are supplementary and m ($\angle$ A) = m ($\angle$ B) , then m ($\angle$ A) = ... (a) 45° (b) 60° (c) 90° (d) 180°
46	The sum of measures of the accumulative angles at a point = ... (a) 2 right angles. (b) 3 right angles. (c) 4 right angles. (d) 5 right angles.
47	If $\overline{AB} \equiv \overline{CD}$, then AB = ... (a) $\overrightarrow{CD}$ (b) $\overline{CD}$ (c) CD (d) AD

48

Complete the following :

If a straight line intersects two parallel straight lines ,
then : …………… , …………… , ……………

49 If two straight lines intersect , then each two vertically opposite angles are ……………

50 If $\Delta ABC \equiv \Delta XYZ$, then $\overline{AC} \equiv$ ……………

51 If a straight line intersects two parallel straight lines , then every two alternate angles are ……………

52 If two straight lines intersect , then each two vertically opposite angles are ……………

53 Two angles are congruent if they are ……………

54 The two right-angled triangles are congruent if ……………

55 A straight line that is perpendicular to one of two parallel lines is ……………

56 If a straight line intersects two parallel straight lines , then each two corresponding angles are ……………

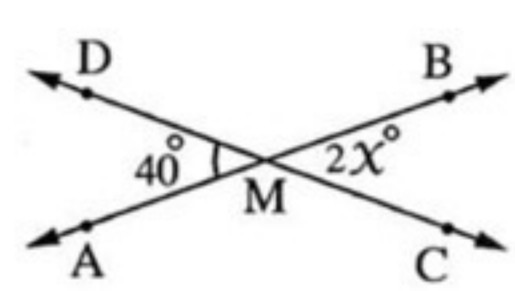
57 If two adjacent angles are supplementary angles , then their outer sides are ……………

58 If $\overline{AB} \equiv \overline{CD}$, then AB – CD = ……………

59 **In the opposite figure :**

$\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \{M\}$

, then $x =$ ……………°



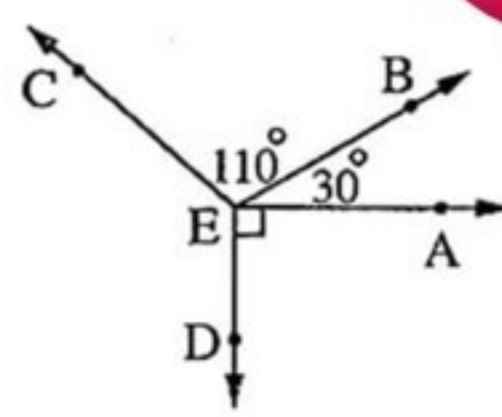
60

In the opposite figure :

$m(\angle AEB) = 30^\circ$,

$m(\angle BEC) = 110^\circ$, $m(\angle AED) = 90^\circ$

Find : $m(\angle CED)$



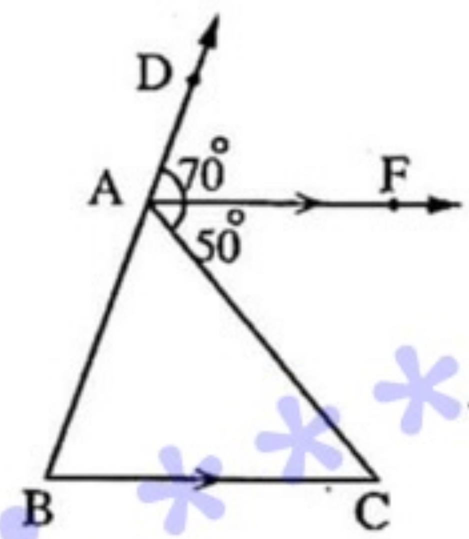
61

In the opposite figure :

$\overrightarrow{AF} \parallel \overline{BC}$, $m(\angle DAF) = 70^\circ$,

$m(\angle FAC) = 50^\circ$

Find : ① $m(\angle B)$ ② $m(\angle C)$



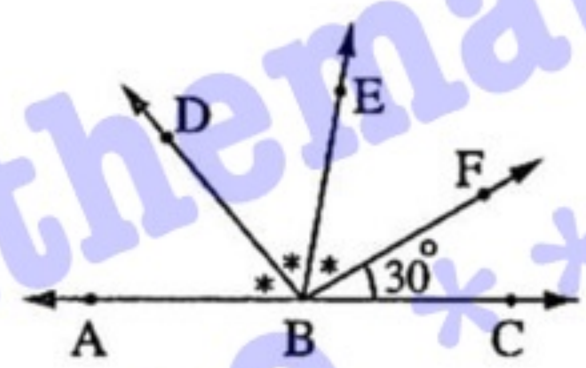
62

In the opposite figure :

$B \in \overleftrightarrow{AC}$, $m(\angle FBC) = 30^\circ$,

$m(\angle ABD) = m(\angle DBE) = m(\angle EBF)$

Find : $m(\angle ABE)$



63

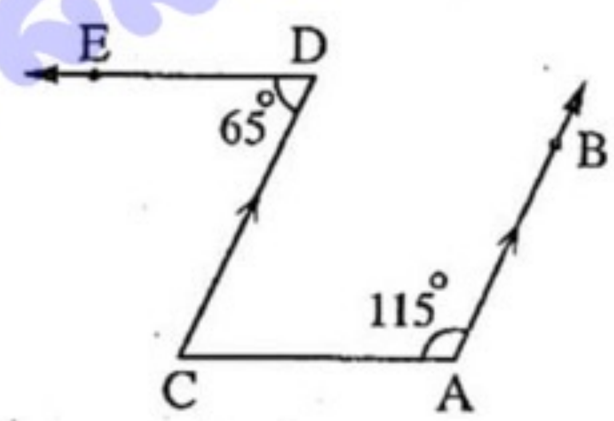
In the opposite figure :

$\overrightarrow{AB} \parallel \overline{CD}$

, $m(\angle EDC) = 65^\circ$

, $m(\angle BAC) = 115^\circ$

Is $\overline{AC} \parallel \overrightarrow{DE}$? Why ?



64

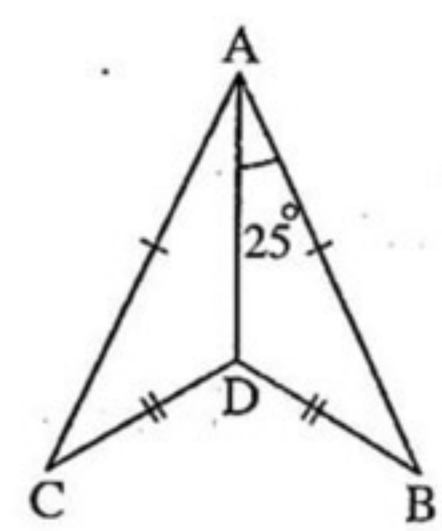
In the opposite figure :

$AB = AC$, $BD = CD$

, $m(\angle BAD) = 25^\circ$

Is $\Delta ADC \equiv \Delta ADB$? Why ?

Then find : $m(\angle CAB)$



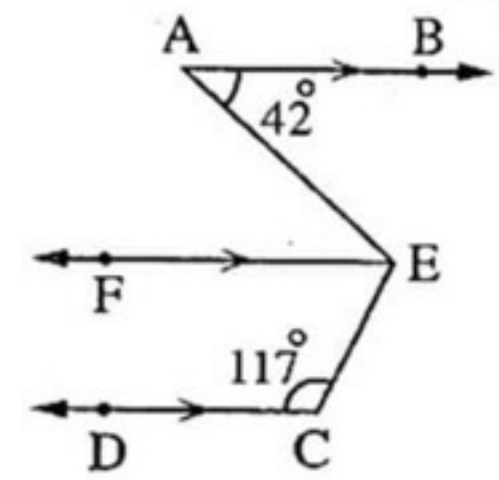
65

In the opposite figure :

$\overrightarrow{AB} \parallel \overrightarrow{CD} \parallel \overrightarrow{EF}$, m (∠ BAE) = 42° ,

and m (∠ ECD) = 117°

Determine : m (∠ AEC)



66

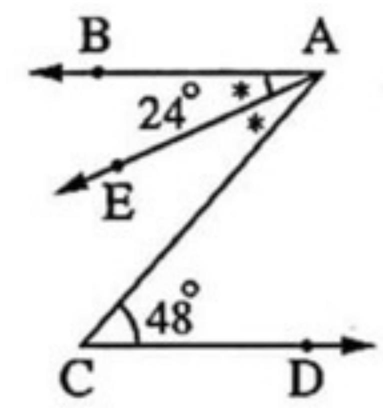
In the opposite figure :

$\overrightarrow{AE}$ bisects ∠ BAC , m (∠ BAE) = 24°,

m (∠ ACD) = 48°

(1) **Find :** m (∠ BAC) ? (Give reasons).

(2) Is $\overrightarrow{AB} \parallel \overrightarrow{CD}$? Why ?



67

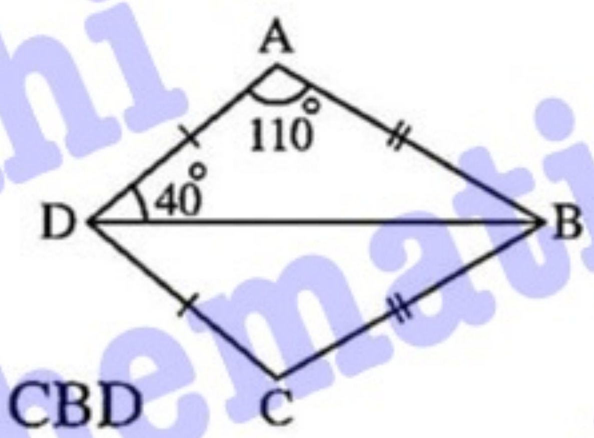
In the opposite figure :

BA = BC , DA = DC , m (∠ A) = 110°

and m (∠ ADB) = 40°

(1) Mention the reason of congruency of the two triangles ABD and CBD

(2) **Find :** m (∠ ABC)



68

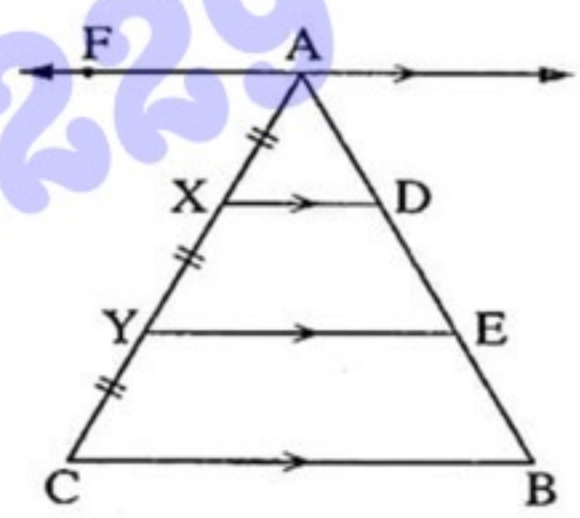
In the opposite figure :

$\overleftrightarrow{AF} \parallel \overleftrightarrow{DX} \parallel \overleftrightarrow{YE} \parallel \overleftrightarrow{CB}$,

AX = XY = YC

If EB = 5 cm.

Find : The length of $\overline{AB}$



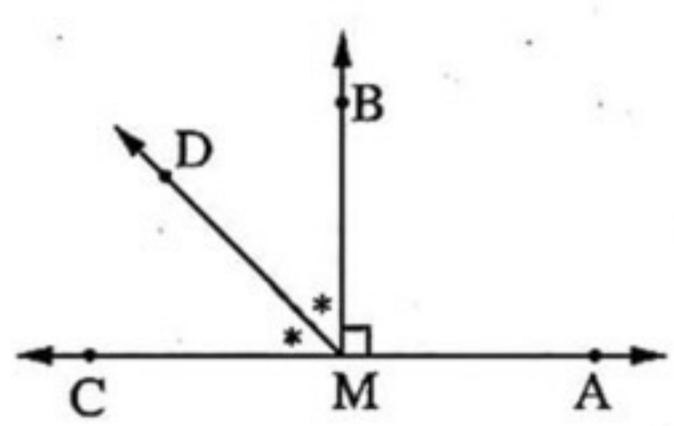
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In the opposite figure :

m (∠ AMB) = 90° ,

$\overrightarrow{MD}$ bisects ∠ BMC , M ∈ $\overleftrightarrow{AC}$

Find : m (∠ CMD)



70

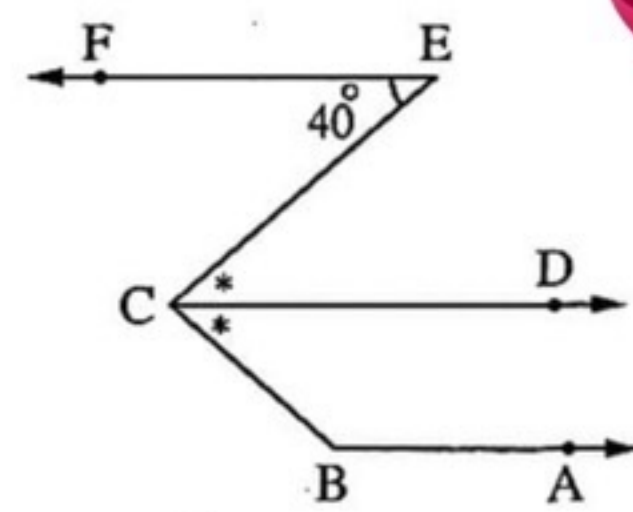
In the opposite figure :

$\overrightarrow{BA} \parallel \overrightarrow{CD}$, $\overrightarrow{CD} \parallel \overrightarrow{EF}$,

$\overrightarrow{CD}$ bisects ∠ BCE ,

m (∠ CEF) = 40°

Find : m (∠ B)



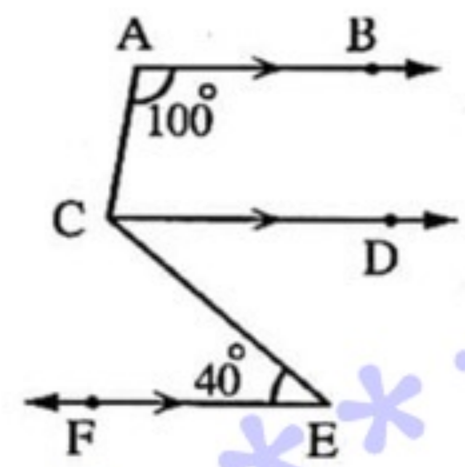
71

In the opposite figure :

$\overrightarrow{AB} \parallel \overrightarrow{CD} \parallel \overrightarrow{EF}$,

m (∠ BAC) = 100° and m (∠ CEF) = 40°

Find with giving reasons : m (∠ ACE)



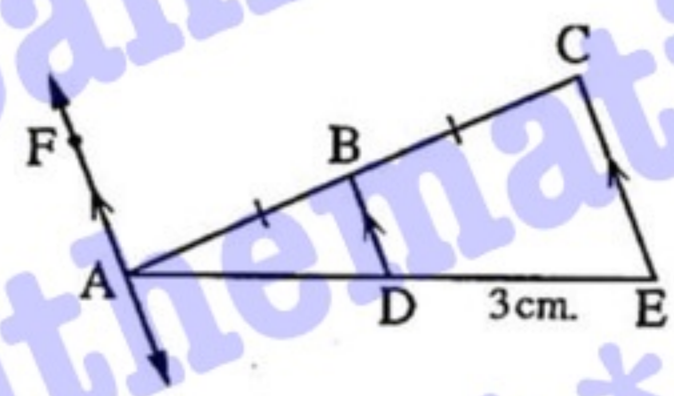
72

In the opposite figure :

$\overleftrightarrow{AF} \parallel \overline{DB} \parallel \overline{EC}$,

AB = BC and DE = 3 cm.

Find : AE (Give reasons).



73

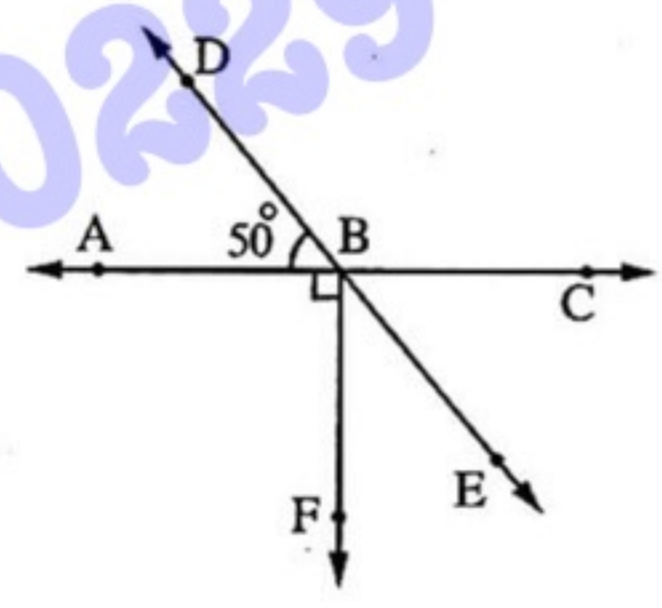
In the opposite figure :

$\overleftrightarrow{AC} \cap \overleftrightarrow{DE} = \{B\}$, m (∠ ABD) = 50°

and m (∠ ABF) = 90°

Find with steps :

① m (∠ EBC) ② m (∠ DBC)



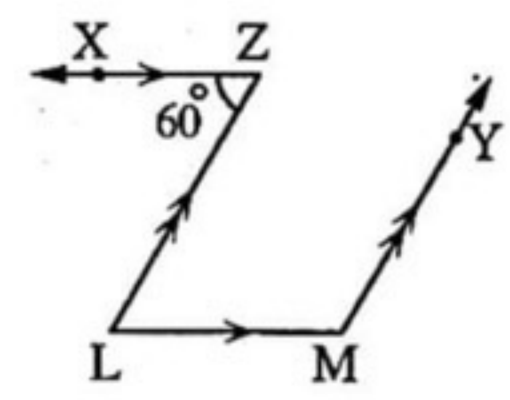
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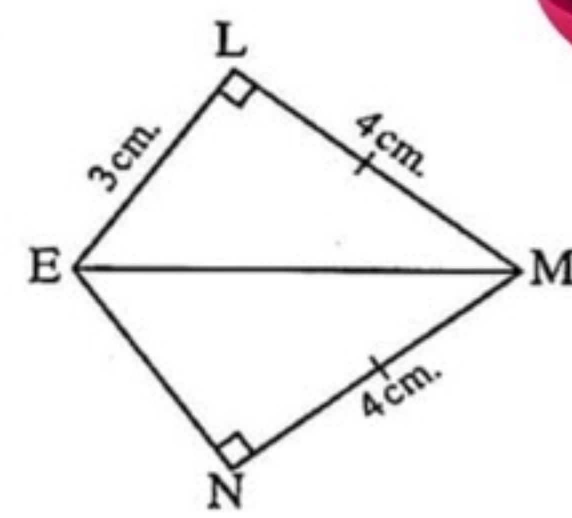
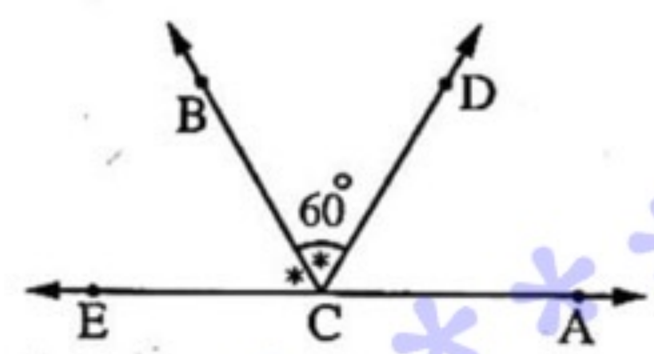
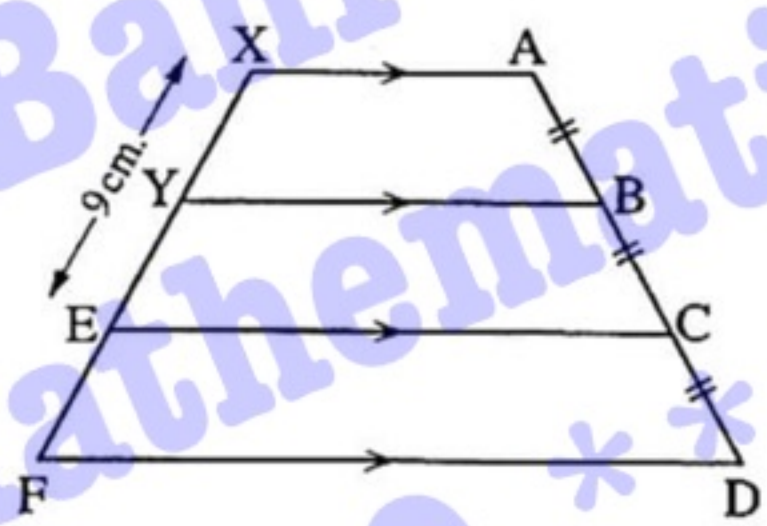
In the opposite figure :

$\overrightarrow{ZX} \parallel \overrightarrow{LM}$, $\overrightarrow{LZ} \parallel \overrightarrow{MY}$, m (∠ Z) = 60°

Find :

① m (∠ L) ② m (∠ M)



75	**In the opposite figure :** m (∠ MLE) = m (∠ MNE) = 90° , LM = MN = 4 cm. , LE = 3 cm. ① **Prove that :** Δ LME ≡ Δ NME ② **Find :** the length of : $\overline{NE}$ 
76	**In the opposite figure :** C ∈ $\overleftrightarrow{AE}$, m (∠ BCD) = 60° , $\overrightarrow{CB}$ bisects ∠ DCE **Find :** m (∠ ACD) 
77	**In the opposite figure :** $\overline{AX}$ // $\overline{BY}$ // $\overline{CE}$ // $\overline{DF}$, AB = BC = CD , XE = 9 cm. **Find :** the length of $\overline{YF}$ (Give reasons) 
78	Write three cases of congruency of two triangles.
78	Draw ∠ ABC of measure 125° , use the compasses to bisect it (Don't remove the arcs).
79	Using the ruler and the compasses , draw the line segment $\overline{BC}$ with length 7 cm. , then draw the straight line L as an axis of symmetry of it. (Don't remove the arcs)
80	Using the ruler and the compasses , draw Δ ABC in which AB = AC = 6 cm. , BC = 5 cm. Bisect ∠ B , ∠ C by two bisectors which intersect at M **Prove by measuring that :** MB = MC (Don't remove the arcs)

Good luck

(1) Complete each of the following.

1) If two straight lines intersect, then each two vertically opposite angles are …………

2) The two right angled triangle are congruent if ……………

3) The two angles are congruent if they are ……………

4) The complement of the acute angle is ……………angle

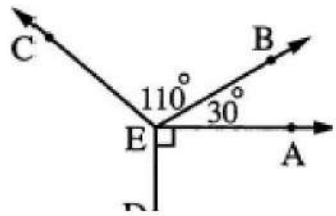
5) If the two adjacent angles are supplementary, then their two terminal sides are ……………

6) If: m(∠B) = 160° , then m (reflex∠B) = ……………°

7) If: ∠A supplements ∠B and ∠A = ∠B , then m (∠B) = ……………°

8) In the opposite figure:

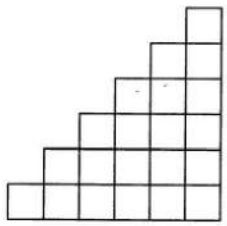
m (∠CED) = ……………°



9) In the opposite figure:

If the square □ represents the unit area, then:

the area of the figure = ………. Unit area



10) The sum of measures of the accumulative angles at a point = ……………

11) The two triangle are congruent if two sides and ……………of one triangle congruent to the corresponding parts of the other triangle.

12) The two adjacent angles formed by a straight line and a ray with a starting point on this straight line are ……………

13) ……………is the union of two rays with the same starting point.

14) If : AB ≡ CD , then : AB – CD = ……………

15) The sum of measures of the accumulative angles at a point = ……………………

16) The two triangle are congruent if two sides and ……………………of one triangle congruent to the corresponding parts of the other triangle.

17) The two adjacent angles formed by a straight line and a ray with a starting point on this straight line are ……………………

18) ……………………is the union of two rays with the same starting point.

19) If: AB ≡ CD, then: AB – CD = ……………………

20) If: AB = LM, BC = MN and $m(\angle B) = m(\angle M)$, then the two triangles …………………… and …………………… are congruent.

21) If Z is the midpoint of XY, then: XY ……………………YZ

22) If the two outer sides of two adjacent angles are on the same straight line, then these two adjacent angles are ……………………

23) Two triangles are congruent if two angles and ……………………

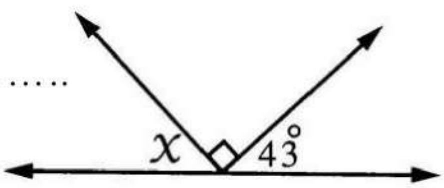
24) The supplement of the obtuse angle is ……………………angle.

25) The complement of an angle of measure 43° equals ……………………°

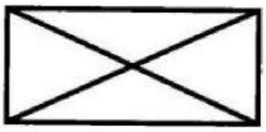
26) The straight line that is perpendicular to one of two parallel lines is ……………………

27) Two triangles are congruent if two angles ………..

28) In the opposite figure: X = ……………………°



29) The number of triangles in the opposite figure is ....



(2) Choose the correct answer.

1) The angle whose measure is more than 180° and less than 360° is called ....

a) Acute   b) Obtuse   c) Straight   d) reflex

2) If the ratio between two supplementary angles is 7 : 11 , thrn the measure of the smaller angle is : ....

a) 35°   b) 55°   c) 70°   d) 110°

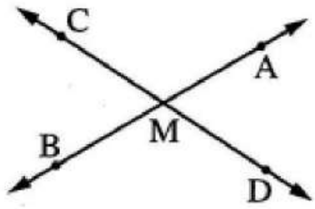
3) The sum of the measures of the accumulative a angles at a point is ....

a) 90°   b) 180°   c) 270°   d) 360°

4) The two angles AMD, BMC are called:

a) Vertically opposite angles   b) Adjacent

c) Alternate   d) corresponding



5) All of the following triangles are congruent except figure ....)

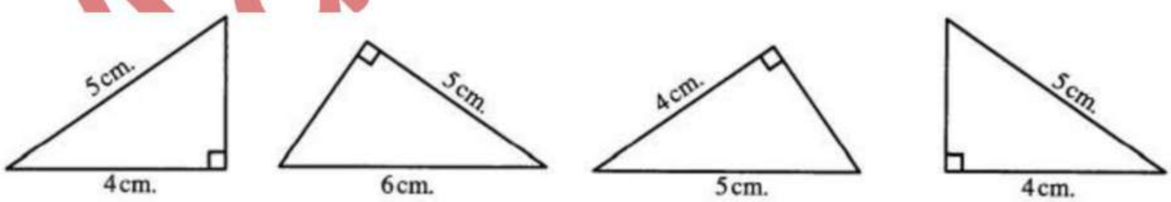


figure (a)   figure (b)   figure (c)   figure (d)

6) If : m(∠A) = 90° , then m(reflex∠A) = ...°

a) 90°   b) 120°   c) 180°   d) 270°

7) The angle whose measure is 30° supplements an angle of measure ....

a) 60°   b) 150°   c) 170°   d) 230°

8) The sum of measures of the accumulative angles at a point = ……………

a) 6 b) 5 c) 3 d) 4

9) If : ΔABC ≡ ΔXYZ , m(∠A) = 40° and m(∠Z) = 80° , then m(∠B) = ……..

a) 40 b) c) 80 d) 70 e) 60

10) m∠XYZ = $\overrightarrow{YZ}$ …………………………………………… $\overrightarrow{YX}$

a) ∪ b) ∩ c) ≡ d) =

11) If : $\angle A$ complement $\angle B$, m($\angle A$) = m($\angle B$), then m($\angle A$) = ……………°

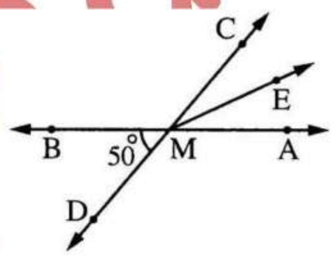
a) 45° b) 60° c) 90° d) 180°

12) In the opposite figure :

AB ∩ CD = {M} , ME bisect $\angle AMC$

And m($\angle DMB$) = 50

, then m($\angle AME$) = ……………



a) 50° b) 65° c) 25° d) 80°

13) The complement of the zero angle is …………… angle.

a) Zero b) Acute c) Right d) Obtuse

14) If : $\Delta ABC \equiv \Delta XYZ$, m($\angle A$) = 50° and m($\angle y$) = 60° , then m($\angle C$) = ……………

a) 50 b) 60 c) 70 d) 80

15) ∠If : ΔABC ≡ ΔXYZ , Then: XY = ……………

a) BC b) AC c) AB d) YZ

16) The supplement of an angle of measure 30° is ……………

a) 30° b) 60° c) 120° d) 150°

17) The two intersecting straight lines : ……………

a) Perpendicular b) Are on the same plane

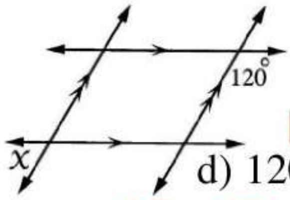
c) Skew d) Are not on the same plane

18) In ΔABC : m(∠B) = 3 m(∠A) = 90° , then m(∠C) = ………………

a) 30° b) 45° c) 60° d) 90°

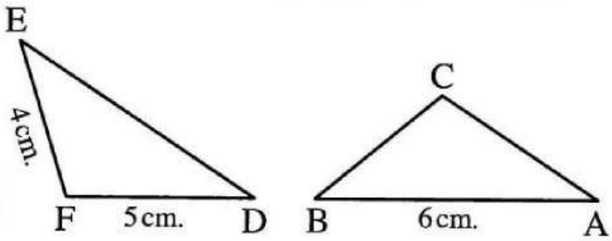
19) In the opposite figure:

X = ……………… °



a) 30° b) 60° c) 90° d) 120°

20) In : ΔABC ≡ ΔDEF then the perimeter of ΔABC = ………………



a) 9 cm b) 10 cm

c) 11 cm d) 15 cm

21) If : m(∠A) + m(∠B) = 180° , then m(∠A) and m(∠B) = ……………… °

a) equal in measure b) complementary angles

c) supplementary angles d) adjacent angles

22) If the vertically opposite angles are complementary , then the measure of each one = ………………

a) 45° b) 50° c) 90° d) 180°

23) If a line segment is extended form one of its terminals without limit , it will be ………………

a) Line segment b) Ray c) Straight line d) Angle

e)

24) If : m(∠A) = 170° , then : m(reflex∠A) = ……………… °

a) 190° b) 180° c) 170° d) 360°

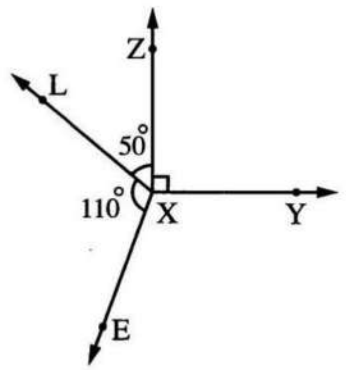
25) The angle whose measure is $90\frac{1}{2}$° is ……………… Angle

a) Right b) Acute c) Obtuse d) straight

(3) In the opposite figure :

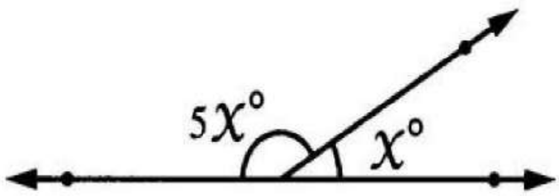
m(∠YXZ) = 90° , m(∠ZXL) = 50°

and m(∠LXE) = 110°



(4) In the opposite figure:

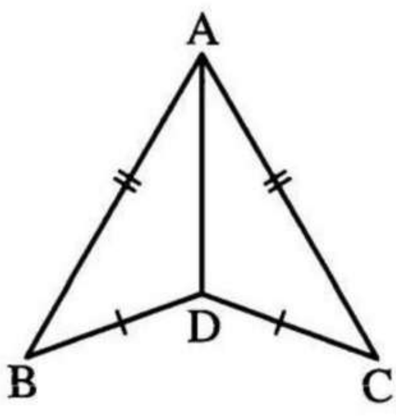
Find the value of x in degrees.



(5) In the opposite figure:

AB = AC and BD = CD

Show that: $\overrightarrow{AD}$ Bisect $\angle A$



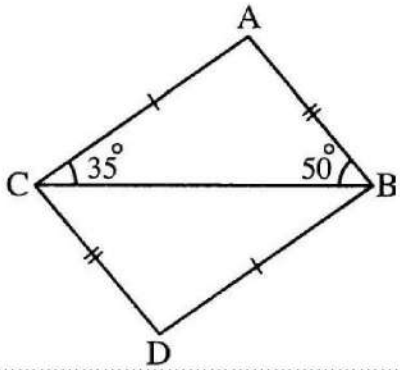
(6) In the opposite figure:

AC = BD, AB = CD, m (∠ABC) = 50°

And m (∠ACB) = 35°

a) Study the congruence of ΔABC and ΔDCB

b) Find: m(∠D)



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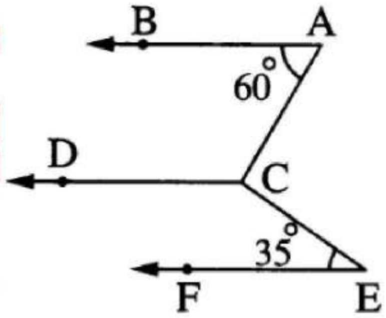
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(7) In the opposite figure :

AB // CD, AB //EF

m(∠A)=60 and m (∠E) =35

Find: m (∠ACE)



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(8) In the opposite figure:

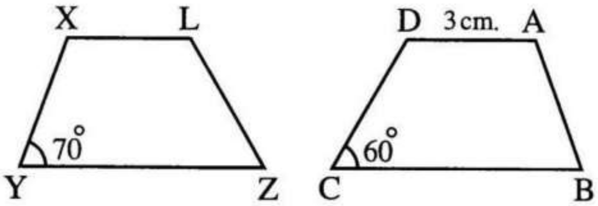
The polygon ABCD ≡ the polygon XYZL

Find:

a) the length of LX

b) m (∠Z)

c) m(∠B)



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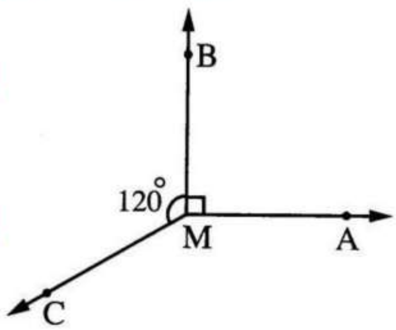
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(9) In the opposite figure:

m(∠AMB) = 90 and

m(∠DMB) = 120

Find w: m(∠AMC)



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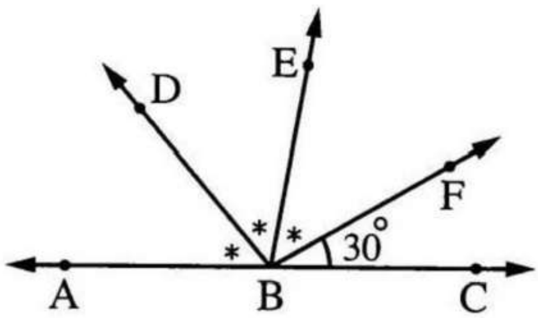
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(10) In the opposite figure :

B ∈ AC , m(∠FBC) = 30

And m (∠ABD) = m(∠DBE) = m(∠EBF)

Find: m(∠ABE)



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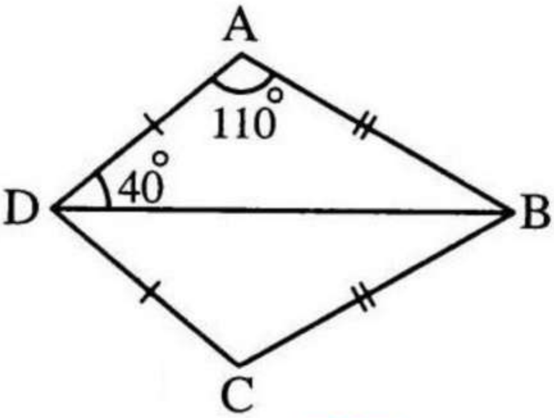
(11) In the opposite figure:

BA = BC, DA = DC, m (∠A) = 110°

and m(∠ADB) = 40°

a) Mention the reason of congruency of the two triangles ABD and CBD

b) Find: m (∠ABC)



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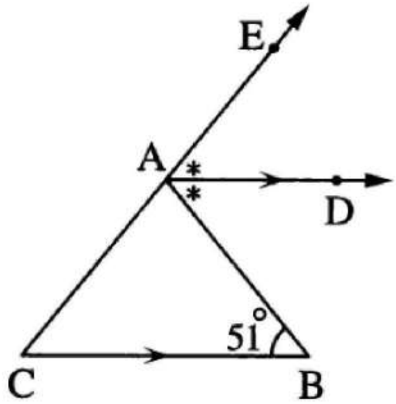
(12) <u>In the opposite figure:</u>

AD // CB

AD bisects ∠BAE

a. and m(∠B) = 51

b. Find : m(∠BAD) , m(∠C)



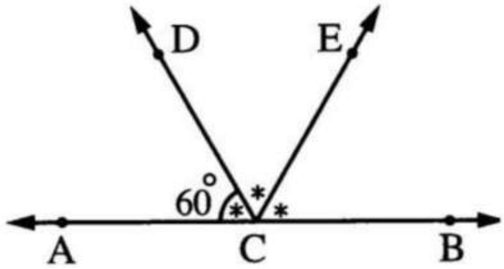
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(13) <u>In the opposite figure:</u>

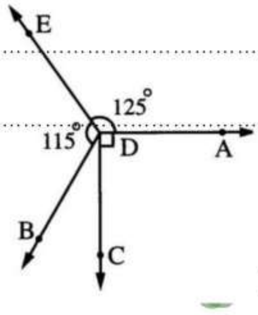
Are CA and CB on the same straight line? Why?



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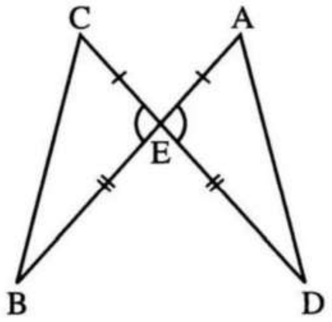
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(14) In the opposite figure:

Show with given the reason:

Is ΔAED congruent to ΔCEB



....

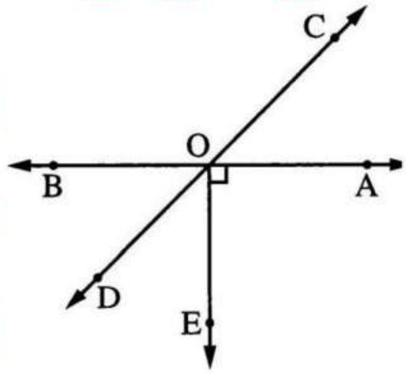
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(15) In the opposite figure:

OD bisect ∠ADE, AB ∩ CD = {O}

, m (∠AOE) = 90 , Find : m (∠AOC)



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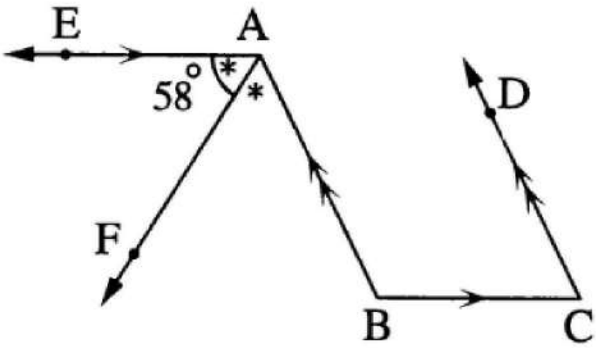
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(16) In the opposite figure:

CD // BA, CB //AE

AF bisects ∠BAE , and m (∠FAE) = 58

Find: m (∠C)



....

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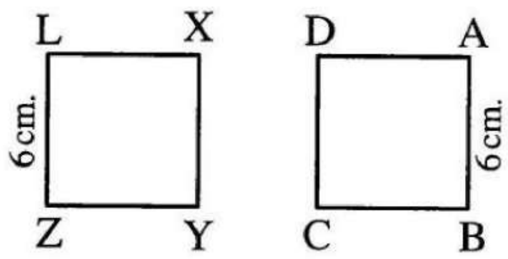
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(17) In the opposite figure :

ABCD, XYZL are two squares

where AB = 6cm , ZL = 6cm

are the two squares congruent? Give reason.



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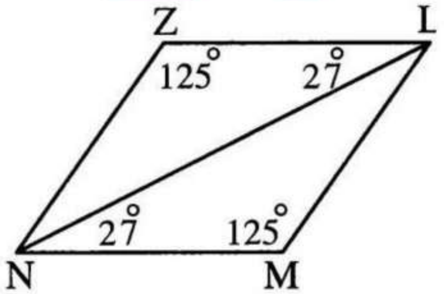
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(18) In the opposite figure :

Are the two triangles LMN and NZL congruent?

Why? And find m (∠LNZ)



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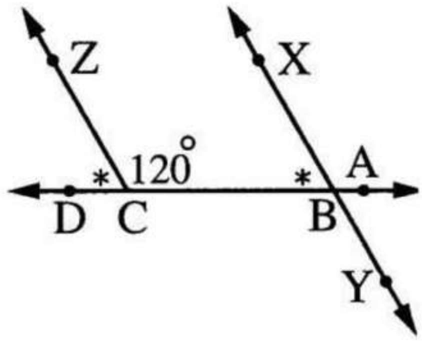
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(19) In the opposite figure:

AD ∩ XY = {B}, m (∠BCZ) = 120

m(∠XBC) = m(∠ZCD)

is XY// CZ ? , then find m (∠ABY)



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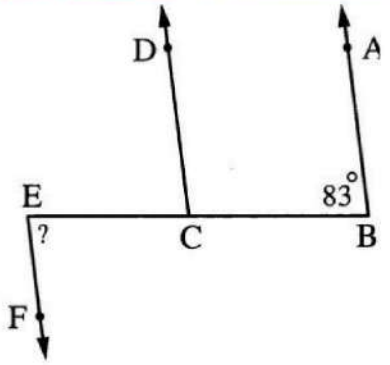
....

(20) In the opposite figure:

BA // CD , CD // EF and

m (∠ABC) = 83°

Find: (∠CEF)



....

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(21) In the opposite figure:

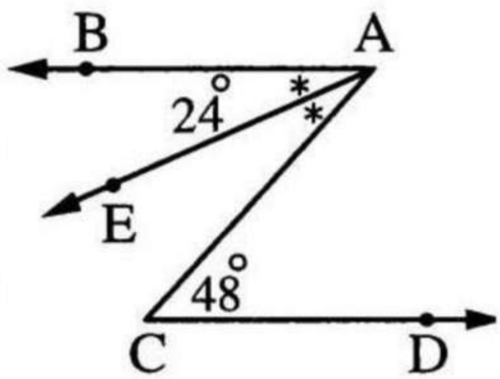
AE bisects ∠BAC , m (∠BAE) = 24°

m(∠ACD) =48°

Complete.

a. m (∠BAC) = …………°

b. AB // …………



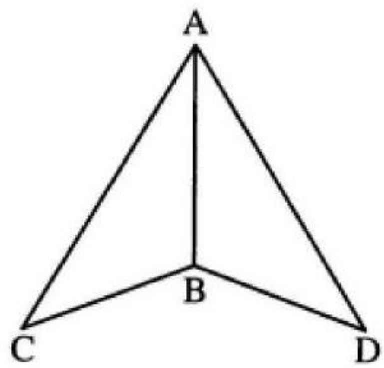
(22) In the opposite figure:

If ΔABC ≡ ΔABD

let the perimeter of the figure ACBD = 20 cm

and AB = 6m , then perimeter of

ΔABC = ………… cm.

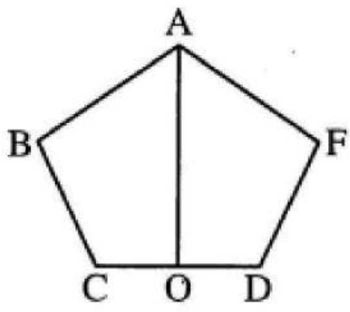


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(23) In the opposite figure:



The figure ABCO ≡ the figure AFDO

a) Mention the corresponding vertex to C

b) Explain why AO bisect ∠BAF

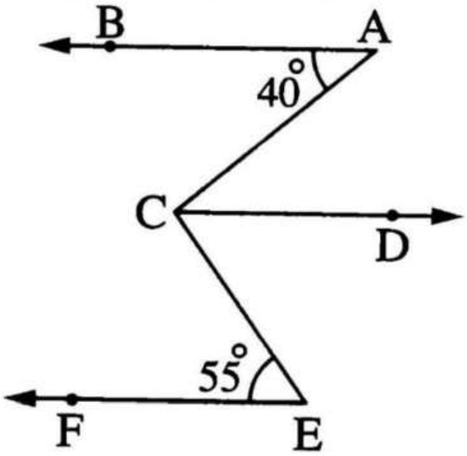
c) Explain why AO is the axis of symmetry of CD

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(24) In the opposite figure.



$\overleftrightarrow{AB}$ m (∠ A) = 40°, m (∠ E) = 55°,

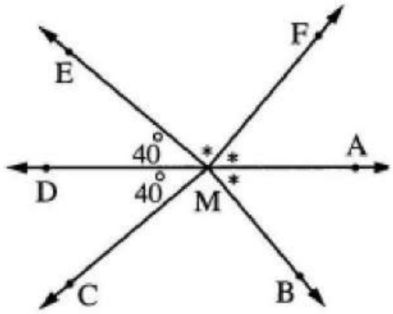
$\overrightarrow{AB}$ // $\overrightarrow{EF}$ and $\overrightarrow{AB}$// $\overrightarrow{CD}$Find: m (∠ ACE)

……………………………………………………………………………………………

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(25) In the opposite figure:



m (∠CMD) = m(∠EMD) = 40,

m(∠AMB) = m(∠AMF) = m(∠EMF)

a) Find : m(∠AMF)

b) Find : m(∠BMC)

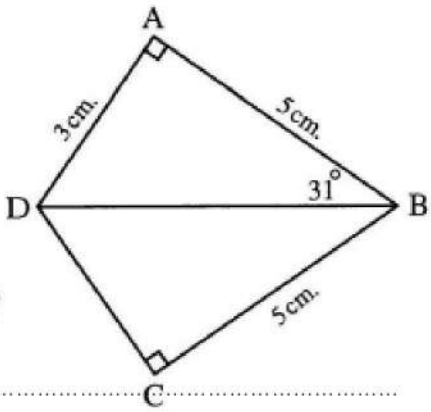
c) Are the points B, M and E collinear? Why?

……………………………………………………………………………………………

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(26) In the opposite figure :



m(∠BAD) = m(∠BCD) = 90°

m(∠ABD) = 31°, AB = CB = 5 cm , AD = 3 cm

a) Are the two triangles ABD and CBD congruent? why?

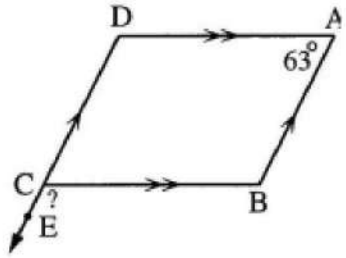
b) Find the length of : CD

....

....

....

(27) In the opposite figure:



AB // DC , AD// BC

and m (∠BAD) = 63°

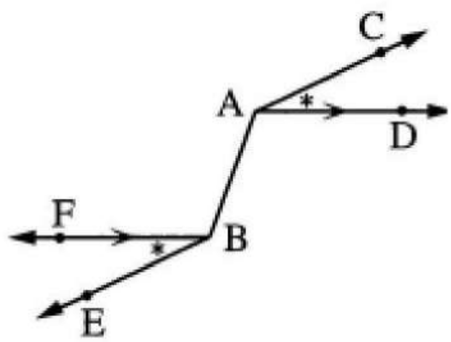
Find : m(∠BCE)

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....

(28) In the opposite figure:



AD // BF

m (∠CAD) = m(∠EBF)

Is AC // BE ? why?

....

....

....

(1) Complete each of the following.

a) If two straight lines intersect, then each two vertically opposite angles are **Equal in measure**

b) The two right angled triangle are congruent if **The hypotenuse and side of one triangle are congruent to their corresponding part in the other triangle**

c) The two angles are congruent if they are **Equal in measure**

d) The complement of the acute angle is **acute** angle

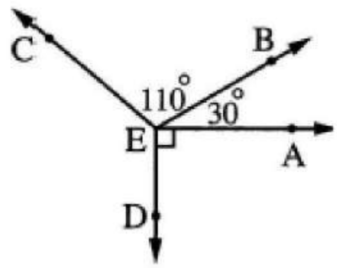
e) If the two adjacent angles are supplementary, then their two terminal sides are **On the same straight line**

f) If: m(∠B) = 160° , then m (reflex∠B) = **200°** °

g) If: ∠A supplements ∠B and ∠A = ∠B , then m (∠B) = **90°** °

h) In the opposite figure:

m (∠CED) = **130°** °



i) The sum of measures of the accumulative angles at a point = **360°**

j) The two triangle are congruent if two sides and **Angle included between them** of one triangle congruent to the corresponding parts of the other triangle.

k) The two adjacent angles formed by a straight line and a ray with a starting point on this straight line are **supplementary**

l) **Angle** is the union of two rays with the same starting point.

m) If : $\overline{AB} \equiv \overline{CD}$, then : AB – CD = ... **0** .....

n) If: AB = LM, BC = MN and $m(\angle B) = m(\angle M)$, then the two triangles ..... **ABC** ..... and ..... **LMN** ..... are congruent.

o) If Z is the midpoint of XY, then: XZ ..... **=** ..... YZ

p) If the two outer sides of two adjacent angles are on the same straight line, then these two adjacent angles are ..... **supplementary**

q) Two triangles are congruent if two angles and

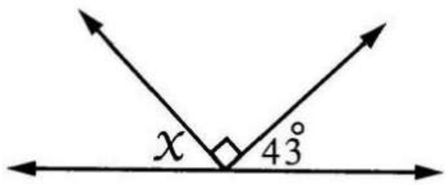
The side drawn between their vertices of one triangle are congruent to the corresponding parts of the other triangle

r) The supplement of the obtuse angle is ..... **Acute** ..... angle.

s) The complement of an angle of measure 43° equals ..... **47°** .....°

t) The straight line that is perpendicular to one of two parallel lines is ..... **Perpendicular to the other line**

u) In the opposite figure: X = ... **47°** .....°



(2) Choose the correct answer.

a) The angle whose measure is more than 180° and less than 360° is called .... d ....

a) Acute b) Obtuse c) Straight d) reflex

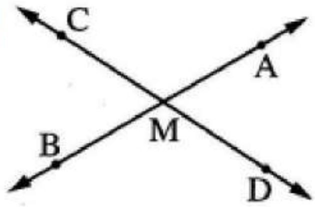
b) If the ratio between two supplementary angles is 7 : 11 , then the measure of the smaller angle is : .... c ....

a) 35° b) 55° c) 70° d) 110°

c) The sum of the measures of the accumulative a angles at a point is .... d ....

a) 90° b) 180° c) 270° d) 360°

d) The two angles AMD, BMC are called: a



a) Vertically opposite angles b) Adjacent

c) Alternate d) corresponding

e) All of the following triangles are congruent except figure .... b ....

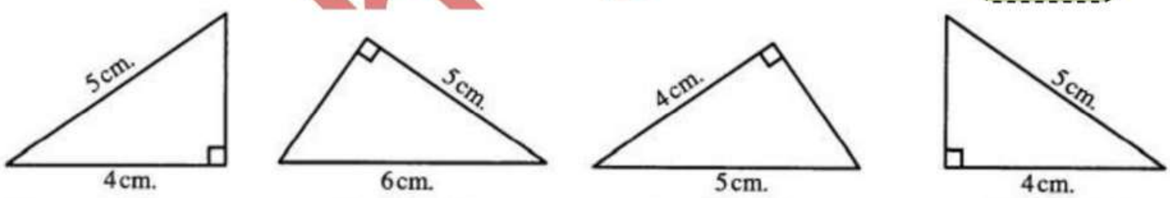


figure (a) figure (b) figure (c) figure (d)

f) If : m(∠A) = 90° , then m(reflex∠A) = ... d ....°

a) 90° b) 120° c) 180° d) 270°

g) The angle whose measure is 30° supplements an angle of measure .... b ....

a) 60° b) 150° c) 170° d) 230°

h) The sum of measures of the accumulative angles at a point = ... d .... Right angles.

a) 6 b) 5 c) 3 d) 4

i) If : $\Delta ABC \equiv \Delta XYZ$, $m(\angle A) = 40°$ and $m(\angle Z) = 80°$, then $m(\angle B) =$ **d**

a) 40 b) 80 c) 70 d) 60

j) $m\angle XYZ = \overrightarrow{YZ}$ .... **a** .... $\overrightarrow{YX}$

a) ∪ b) ∩ c) ≡ d) =

k) If : $\angle A$ complement $\angle B$, $m(\angle A) = m(\angle B)$, then $m(\angle A) =$ .... **a** ....°

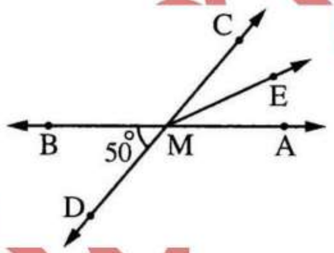
a) 45° b) 60° c) 90° d) 180°

l) In the opposite figure :

AB ∩ CD = {M} , ME bisect $\angle AMC$

And $m(\angle DMB) = 50$

, then $m(\angle AME) =$ .... **c** ....



a) 50° b) 65° c) 25° d) 80°

m) The complement of the zero angle is .... **c** .... angle.

a) Zero b) Acute c) Right d) Obtuse

n) If : $\Delta ABC \equiv \Delta XYZ$, $m(\angle A) = 50°$ and $m(\angle y) = 60°$, then $m(\angle C) =$ .... **c**

a) 50 b) 60 c) 70 d) 80

o) ∠If : $\Delta ABC \equiv \Delta XYZ$, Then: XY = ... **c** ....

a) BC b) AC c) AB d) YZ

p) The supplement of an angle of measure 30° is .... **d** ....

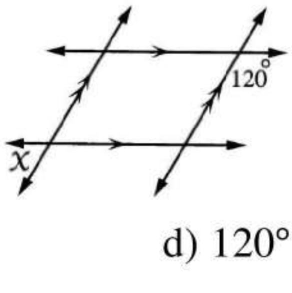
a) 30° b) 60° c) 120° d) 150°

q) In ΔABC : $m(\angle B) = 3\ m(\angle A) = 90°$, then $m(\angle C) =$ .... **c** ....

a) 30° b) 45° c) 60° d) 90°

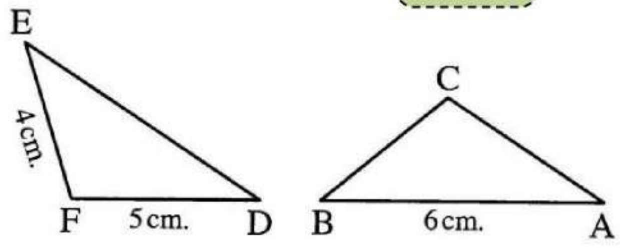
r) In the opposite figure:

X = ... **b** ....°



a) 30° b) 60° c) 90° d) 120°

s) In : $\Delta ABC \equiv \Delta DEF$ then the perimeter of ΔABC = ... **d** ......



a) 9 cm b) 10 cm

c) 11 cm d) 15 cm

t) If : $m(\angle A) + m(\angle B) = 180°$, then $m(\angle A)$ and $m(\angle B)$ = ... **c** ......°

a) equal in measure b) complementary angles

c) supplementary angles d) adjacent angles

u) If the vertically opposite angles are complementary, then the measure of each one = ... **a** ......

a) 45° b) 50° c) 90° d) 180°

v) If a line segment is extended from one of its terminals without limit, it will be ...... **b** ......

a) Line segment b) Ray c) Straight line d) Angle

e)

w) If : $m(\angle A) = 170°$, then : $m(\text{reflex}\angle A)$ = ... **a** ......°

a) 190° b) 180° c) 170° d) 360°

x) The angle whose measure is $90\frac{1}{2}$° is ...... **c** ...... Angle

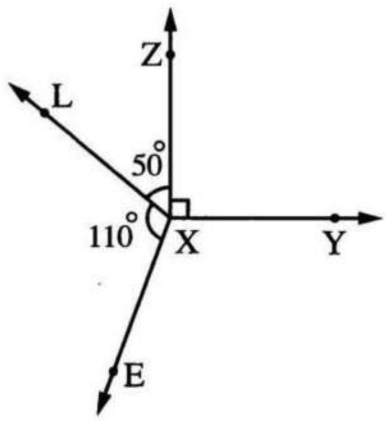
a) Right b) Acute c) Obtuse d) straight

(3) In the opposite figure :

$m(\angle YXZ) = 90°$, $m(\angle ZXL) = 50°$

and $m(\angle LXE) = 110°$

Find $m(\angle EXY)$ **110°**

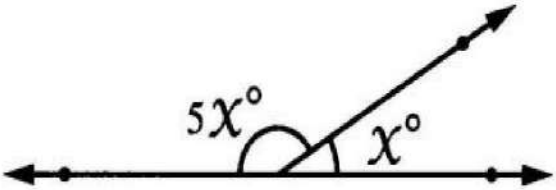


∵ Sum of accumulative angle is 360°

∴ m (∠ EXY) = 360 – (110 + 50 + 90) = 110°

(4) In the opposite figure:

Find the value of x in degrees.



$5x + x = 180$

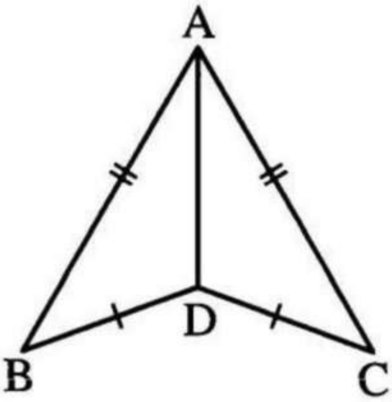
$6x = 180$

$x = 30^{\circ}$

(5) In the opposite figure:

AB = AC and BD = CD

Show that: $\overrightarrow{AD}$ Bisect $\angle A$



In ΔΔ ADB, ADC

∵ AB = AC

BD = CD

AD is a common side

∴ Δ ABD ≡ Δ ADC

∴ $\overrightarrow{AD}$ Bisect ∠A

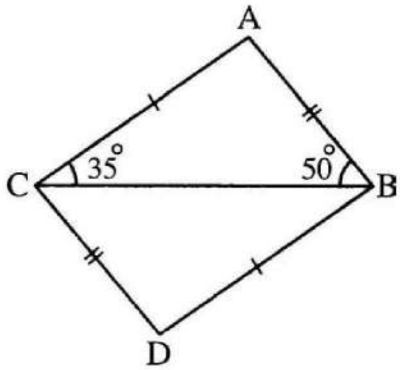
(6) In the opposite figure:

AC = BD, AB = CD, m (∠ABC) = 50°

And m (∠ACB) = 35°

a) Study the congruence of ΔABC and ΔDCB

b) Find: m(∠D)



In ΔΔ ABC, DCB

∵ AC = BD

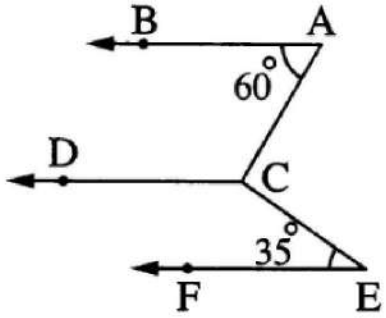
AB = CD

BC is a common side

∴ Δ ABC ≡ Δ DCB

∴ m (∠ D) = m (∠ A) = 180 – (35 + 50) = 95°

(7) In the opposite figure :

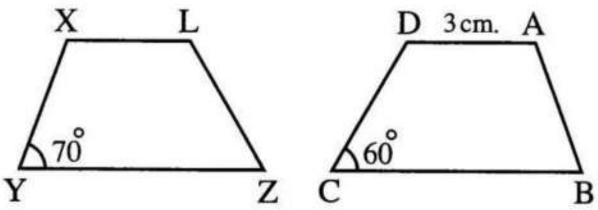


AB // CD, AB //EF

m(∠A)=60 and m (∠E) =35

Find: m (∠ACE) **95°**

(8) In the opposite figure:



The polygon ABCD ≡ the polygon XYZL

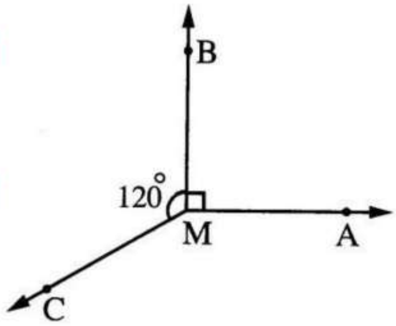
Find:

a) the length of LX **= AD = 3 cm**

b) m (∠Z) **= m (∠ C) = 60°**

c) m(∠B) **= m (∠ Y) = 70°**

(9) In the opposite figure:

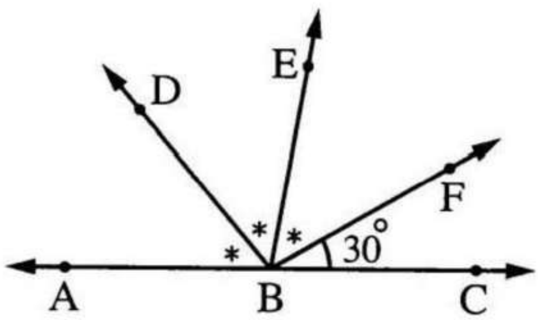


m(∠AMB) = 90 and

m(∠DMB) = 120

Find w: m(∠AMC) **150°**

(10) In the opposite figure :



B ∈ AC , m(∠FBC) = 30

And m (∠ABD) = m(∠DBE) = m(∠EBF)

Find: m(∠ABE) **100°**

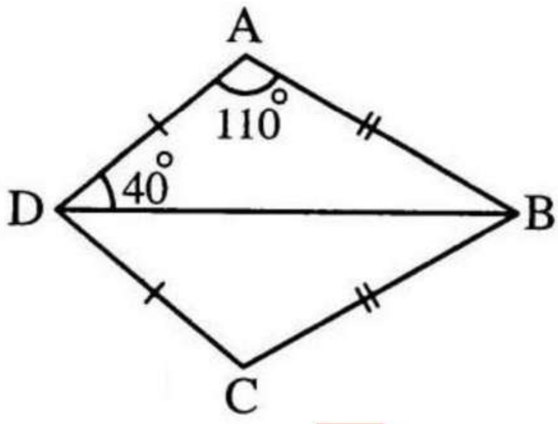
(11) In the opposite figure:

BA = BC, DA = DC, m (∠A) = 110°

and m(∠ADB) = 40°

a) Mention the reason of congruency of the two triangles ABD and CBD

b) Find: m (∠ABC)



In ΔΔ ABD, CBD

∵ AB = CB

AD = CD

BD is a common side

∴ Δ ABD ≡ Δ CBD

∴ m (∠ ABD) = m (∠ DBC) = 180 – (110 + 40) = 30°

∴ m (∠ ABC) = 30 + 30 = 60°

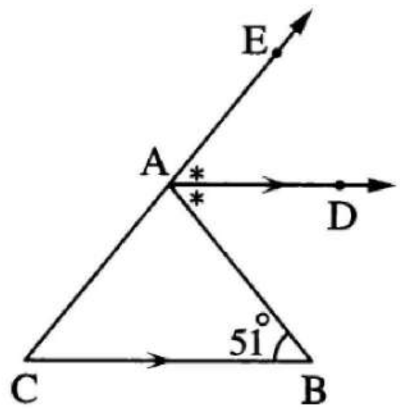
(12) <u>In the opposite figure:</u>

AD // CB

AD bisects ∠BAE

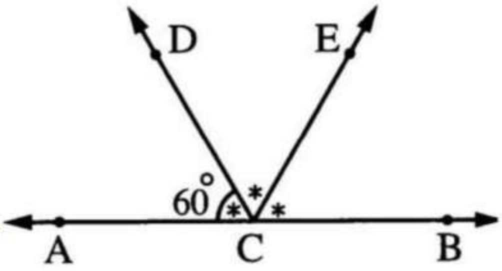
a. and m(∠B) = 51

b. Find: m(∠BAD) , m(∠C)



51° **51°**

(13) <u>In the opposite figure:</u>



Are CA and CB on the same straight line? Why?

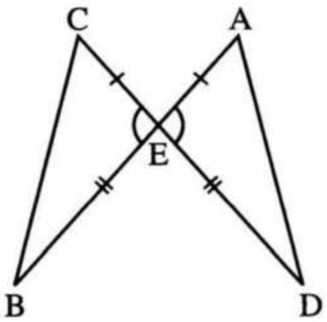
∵ m (∠ ACD) = m (∠ DCE) = m (∠ ECB) = 60°

<u>Now</u>

m (∠ ACD) + m (∠ DCE) + m (∠ ECB) = 60 + 60 + 60 = 180°

∴ CA and CB on the same straight line Bec. The sum of measure is 180° which is called straight angle

(14) In the opposite figure:



Show with given the reason:

Is ΔAED congruent to ΔCEB

In ΔΔ AED, CEB

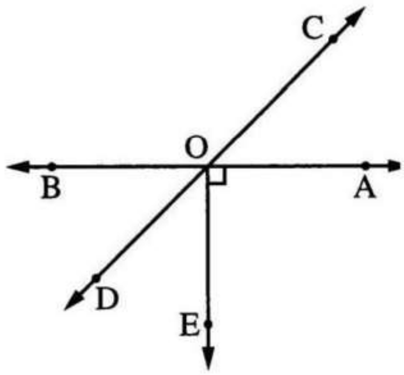
∵ m (∠ AED) = m (∠ CEB)

AE = CE

BE = DE

∴ Δ AED ≡ Δ CEB

(15) In the opposite figure:



OD bisect ∠BOE, AB ∩ CD = {O}

, m (∠AOE) = 90, Find: m (∠AOC)

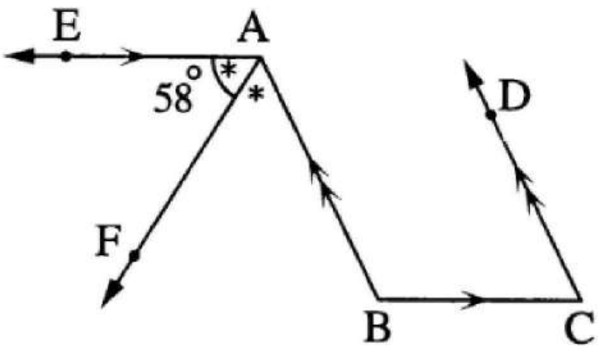
45°

(16) In the opposite figure:

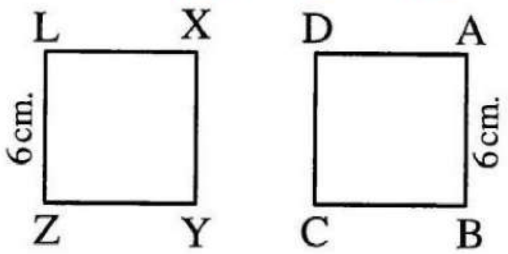
CD // BA, CB //AE

AF bisects ∠BAE , and m (∠FAE) = 58

Find: m (∠C) **64°**



(17) In the opposite figure:



ABCD, XYZL are two squares

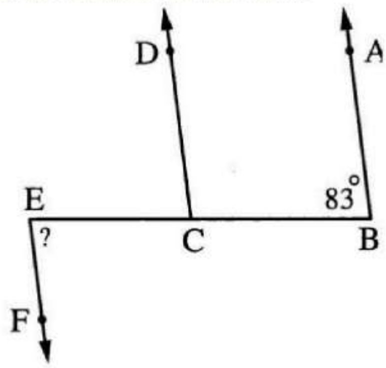
where AB = 6cm , ZL = 6cm

are the two squares congruent? Give reason.

AB = XY = 6 cm **BC = YZ = 6 cm** **CD = ZL = 6 cm**

AD = XL = 6 cm **∴ ABCD ≡ XYZL , Bec. The side length are congruent**

(18) In the opposite figure:

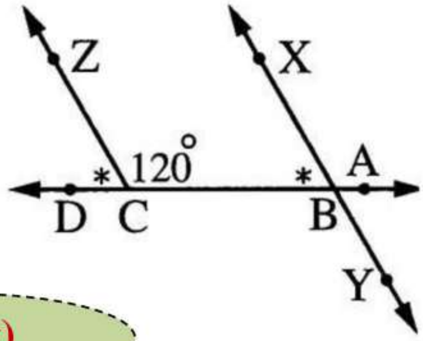


BA//CD , CD// EF and

m (∠ABC) = 83°

Find: (∠CEF) **83°**

(19) In the opposite figure:



AD ∩ XY = {B}, m (∠BCZ) = 120

m(∠XBC) = m(∠ZCD)

is XY// CZ ? , then find m (∠ABY) **60°**

∵ m (∠ XBC) = m (∠ ZCD) = 60° (Corresponding)

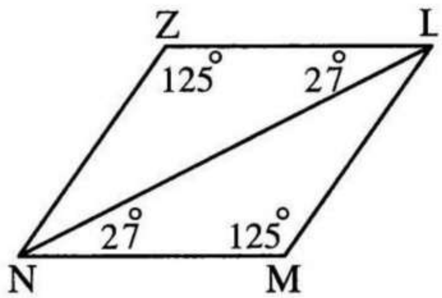
∴ XY // CZ 1

m (∠ XBC) = 180 – 120 = 60° (Interior)

AD ∩ XY = {B}

∵ m (∠ ABY) = m (∠ XBC) = 60° (V.O.A)

(20) In the opposite figure:



Are the two triangles LMN and NZL congruent?

Why? And find m (∠LNZ)

m (∠ LNZ) = 180 – (125 + 27) = 28°

m (∠ NLM) = 180 – (125 + 27) = 28°

In ΔΔ LMN, NZL

∵ m (∠ LMN) = m (∠ NLZ)

NL is a common side

m (∠ ZNL) = m (∠ NLM)

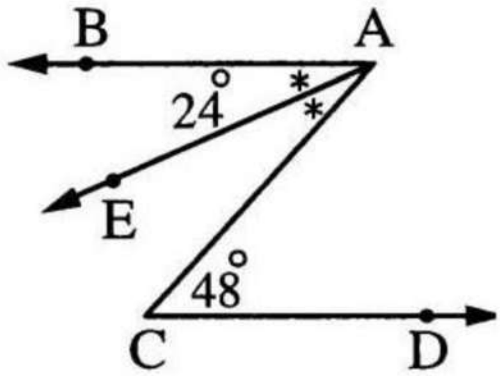
∴ Δ LMN ≡ Δ NZL

∴ m (∠ LNZ) = 28°

(21) In the opposite figure:

AE bisects ∠BAC , m (∠BAE) = 24°

m(∠ACD) =48°



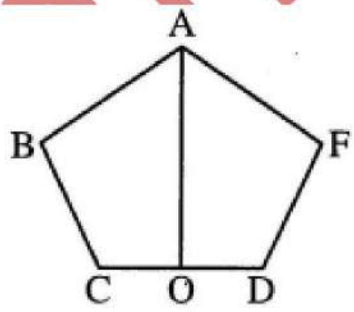
Complete.

a. m (∠BAC) =.. **48°** ..°

b. AB // .. **CD** ..

(22) In the opposite figure:

The figure ABCO ≡ the figure AFDO



a) Mention the corresponding vertex to C **D**

b) Explain why AO bisect ∠BAF

c) Explain why AO is the axis of symmetry of CD

∵ Fig. ABCO ≡ Fig. AFDO **∴ $\overrightarrow{AO}$ Bisect ∠BAF**

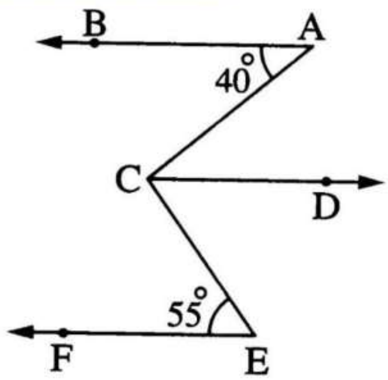
∴ m (∠ BAO) = m (∠ FAO) **∵ CO = OD**

∴AO is axis of symmetry of CD , Bec. It divide the polygon in to two congruent polygons

(23) In the opposite figure.

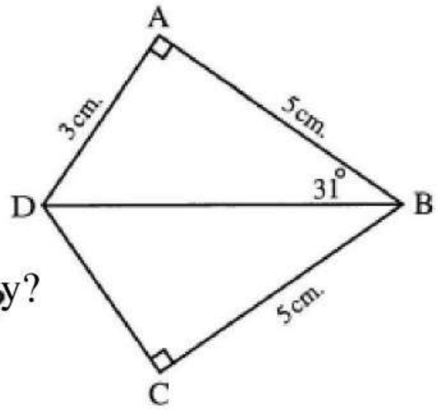
$\overleftrightarrow{AB}$ m (∠ A) = 40°, m (∠ E) = 55°,

$\overrightarrow{AB}$ // $\overrightarrow{EF}$ and $\overrightarrow{AB}$// $\overrightarrow{CD}$Find: m (∠ ACE)



95°

(24) In the opposite figure :



m(∠BAD) = m(∠BCD) = 90°

m(∠ABD) = 31°, AB = CB = 5 cm , AD = 3 cm

a) Are the two triangles ABD and CBD congruent? why?

b) Find the length of : CD

In ΔΔ ABD, CBD

∵ m (∠ A) = m (∠ C) = 90°

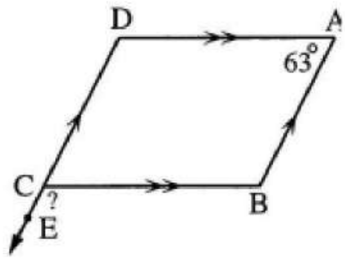
BD is a common side (Hyp.)

AB = CB = 5 cm

∴ Δ ABD ≡ Δ CBD

∴ CD = AD = 3 cm

(25) In the opposite figure:

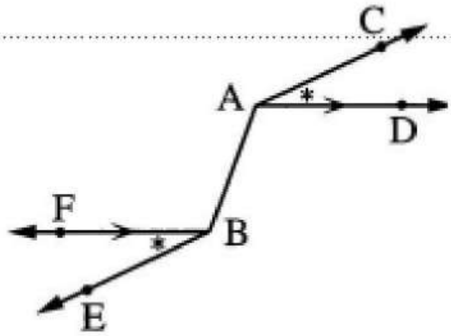


AB // DC , AD// BC

and m (∠BAD) = 63°

Find : m(∠BCE) **117°**

(26) In the opposite figure:



AD // BF

m (∠CAD) = m(∠EBF)

Is AC // BE ? why?

∵ AD // BF , AB is transversal

∴ m (∠ DAB) = m (∠ ABF) (Alternate) 1

∵ m (∠ DAC) = m (∠ FBE) 2

From 1 and 2 ∴ m (∠ CAB) = m (∠ ABE) (Alternate) **∴ AC // BE**

(27) In the opposite figure:

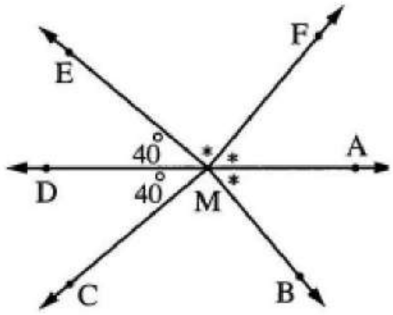
m (∠CMD) = m(∠EMD) = 40,

m(∠AMB) = m(∠AMF) = m(∠EMF)

a) Find : m(∠AMF) **70°**

b) Find : m(∠BMC) **70°**

c) Are the points B, M and E collinear? Why?



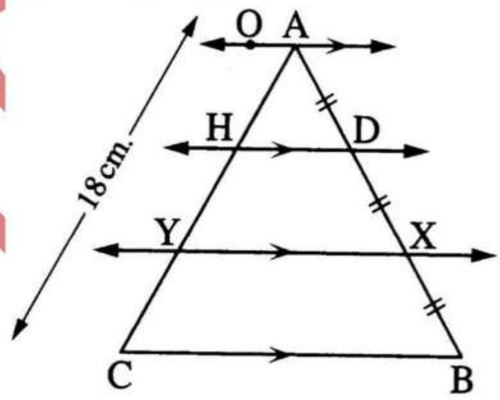
∵ m (∠ BMC) + m (∠ CMD) + m (∠ DME) = 70 + 40 + 40 = 150°

SO B, M, E Are not collinear

(28) In the opposite figure.

$\overleftrightarrow{AO}$ // $\overleftrightarrow{HD}$ // $\overleftrightarrow{YX}$ // $\overline{CB}$, AD = DX = XB and AC = 18 cm

Find the length of $\overline{AY}$



∵ $\overleftrightarrow{AO}$ // $\overleftrightarrow{D}$ // $\overleftrightarrow{YX}$ // $\overline{CB}$

∵ $\boldsymbol{AB\ , AC\ are\ transversals}$

∵ **AD = DX = XB**

$\therefore \boldsymbol{AH = HY = YC = \frac{18}{3} = 6cm}$

$\therefore \boldsymbol{AY = 2 \times 6 = 12\ cm}$

(29) In the opposite figure :

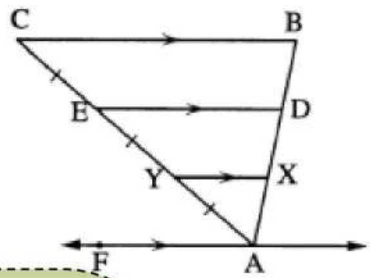
AF // XY // DE // BC

and Ay = YE = EC

AY = 3cm , AX = 2cm

The perimeter of △ **ABC = 23cm.**

Find : BC



∵ $\boldsymbol{AF\ //\ XY\ //\ DE\ //\ BC}$

∵ $\boldsymbol{AB\ , AC\ are\ transversals}$

∵ Ay = YE = EC = 3cm , ∴ $\boldsymbol{AC = 9cm}$

∴ $\boldsymbol{AX = XD = DB = 2\ cm}$, ∴ $\boldsymbol{AB = 6cm}$

∵ The perimeter of △ **ABC = 23cm**

∴ $\boldsymbol{BC = 23 - (9 + 6) = 8cm}$

(30) Using the ruler and the compasses, draw the line segment $\overline{XY}$ of length 9cm , then draw the straight line L as an axis of symmetry of it

(Don't remove the arcs)

Draw by yourself

(31) Using the geometric instruments , draw an angle of measure 70° and bisects it

(Don't remove the arcs)

Draw by yourself

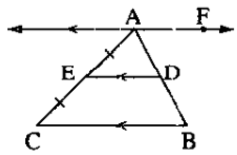
SECOND: GEOMETRY

Choose the correct answer:

(1) If $\angle x \equiv \angle y$, $\angle x$ and $\angle y$ are supplementary angles, then $m(\angle x) =$ ………°

ⓐ 45 ⓑ 90 ⓒ 135 ⓓ 180

(2) In the opposite figure:
$\overleftrightarrow{AF}$ // $\overleftrightarrow{DE}$ // $\overleftrightarrow{BC}$ and AE = EC,
then AD : AB = ………………



ⓐ 2:1 ⓑ 3:2 ⓒ 1:3 ⓓ 1:2

(3) The two straight lines that are perpendicular to a third are ……

ⓐ perpendicular ⓒ intersecting
ⓑ coincident ⓓ parallel

(4) The measure of each of the two equal complementary angles equals …………°

ⓐ 180 ⓑ 45 ⓒ 360 ⓓ 90

(5) If two straight lines intersect, then each two …………… angles have the same measure.

ⓐ vertically opposite ⓒ adjacent
ⓑ alternate ⓓ corresponding

(6) If $\angle x$ complements $\angle y$ and $\angle x \equiv \angle y$, then $m(\angle x) =$ ………°

ⓐ 45 ⓑ 90 ⓒ 180 ⓓ 360

(7) If $\triangle ABC \equiv \triangle XYZ$ and $m(\angle A) = m(\angle B) = 100°$, then $m(\angle X) =$ ……°

ⓐ 50 ⓑ 80 ⓒ 90 ⓓ 100

(8) The sum of the measures of the accumulative angles at a point equals …………°

ⓐ 630 ⓑ 180 ⓒ 90 ⓓ 100

(9) The supplement of the angle of measure 30° is an angle of measure ………°

ⓐ 60 ⓑ 180 ⓒ 150 ⓓ 90

(10) The angle whose measure is more than 90° and less than 180° is …………… angle

ⓐ an obtuse ⓑ an acute ⓒ a right ⓓ a straight

(11) If $\Delta ABC \equiv \Delta XYZ$, then AB = ………

ⓐ XY ⓑ XZ ⓒ YZ ⓓ BC

(12) The sum of the measures of the accumulative angles at a point equals ………… right angles

ⓐ 6 ⓑ 5 ⓒ 3 ⓓ 4

(13) If $\Delta ABC \equiv \Delta XYZ$, $m(\angle A)=40°$ and $m(\angle Z)=80°$, then $m(\angle B)=$……°

ⓐ 40 ⓑ 80 ⓒ 70 ⓓ 60

(14) $\angle XYZ = \overrightarrow{YZ}$ …… $\overrightarrow{YX}$

ⓐ ∪ ⓑ ∩ ⓒ ≡ ⓓ =

(15) The complement of the zero angle ………… angle.

ⓐ an obtuse ⓑ an acute ⓒ a right ⓓ zero

(16) If $m(\angle A) + m(\angle B) = 180°$, then $\angle A$ and $\angle B$ are ……………

ⓐ equal in measure ⓒ complementary angles

ⓑ supplementary angles ⓓ adjacent angles

(17) If the vertically opposite angles are complementary, then the measure of each one equal …………°

ⓐ 45 ⓑ 50 ⓒ 90 ⓓ 180

(18) If a line segment is extended from one of its terminals without limit, it will be ……………

a) a line segment
c) a ray
b) a straight line
d) an angle

(19) If $m(\angle A)$ = 170°, then $m(reflex\angle A)$ = ………°

a) 190 b) 180 c) 170 d) 360

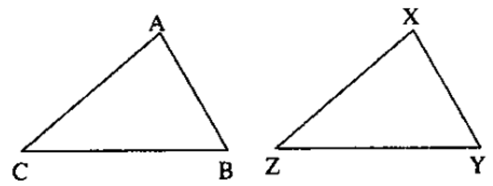
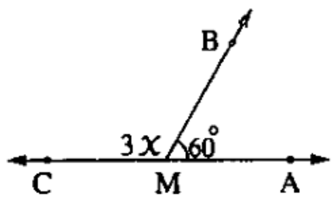
(20) The angle whose measure is $90\frac{1}{2}^{\circ}$ is …………

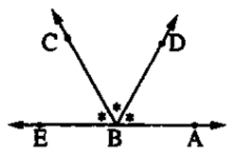
a) an obtuse b) an acute c) a right d) a straight

(21) If two straight lines are perpendicular to a third, then the two straight lines are ……………………

a) perpendicular
c) parallel
b) congruent
d) intersecting

Complete:

(1)	The perpendicular bisector of a line segment is called …………	
(2)	In the opposite figure: If $\Delta ABC \equiv \Delta XYZ$, $m(\angle A) + m(\angle B)$ = 140°, Then $m(\angle Z)$ = …………°	
(3)	In the opposite figure: If $\overrightarrow{MB} \cap \overleftrightarrow{AC} = \{M\}$, $m(\angle AMB)$ = 60° then the value of x equals ………°	

(4)	The sum of measures of the accumulative angles at a point equals ………..°
(5)	If a straight intersects two parallel straight lines, then each two corresponding angles are ………………………
(6)	The two adjacent angles formed by the intersection of a straight line and a ray are ………………………
(7)	The angle whose measure is 50° complements an angle of measure ………..°
(8)	The two straight lines parallel to a third are …………………
(9)	If $\Delta ABC \equiv \Delta XYZ$, then $m(\angle Z) = m(\angle \ldots.)$
(10)	In the opposite: If $B \in \overleftrightarrow{AE}$, then $m(\angle ABD) =$ ……° 
(11)	If two straight lines intersect, then each two vertically opposite angles are ………………
(12)	The two angles are congruent if they are ……………………………
(13)	The complement of the acute angle is ………………… angle.
(14)	If two adjacent angles are supplementary, then their outer sides are …………………………………………………………………………………………
(15)	The two triangles are congruent if two sides and ………………………… …………………………………………… of one triangle are congruent to the corresponding parts of the other triangle.
(16)	The two adjacent angles formed by a straight line and a ray with a starting point on this straight line are …………………………………
(17)	…………………………… is the union of two rays with the same starting point.
(18)	If $\overline{AB} \equiv \overline{CD}$, then AB – CD = ……………

(19) If Z is the midpoint of $\overline{XY}$, then $\overline{XZ}$ .... $\overline{YZ}$

(20) If the two outer sides of two adjacent angles are on the same straight line, then these two angles are ....

(21) The supplement of the obtuse angle is .... angle.

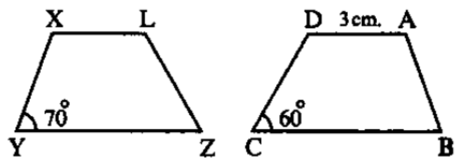
(22) In the opposite figure:

If ABCD ≡ XYZL, complete

(1) LX = ... cm

(2) $m(\angle B)$ = ...°

(3) $m(\angle Z)$ = ...°



Essay problems:

(1) Mention two cases of congruency of two triangles.

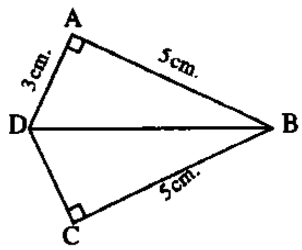
(2) **In the opposite figure :**

m (∠ BAD) = m (∠ BCD) = 90°

, AB = CB = 5 cm. , AD = 3 cm.

Mention the conditions for Δ ABD , Δ CBD to be congruent

, then find : The length of $\overline{CD}$



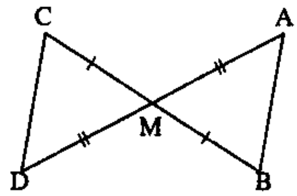
(3) **In the opposite figure :**

$\overline{AD} \cap \overline{BC} = \{M\}$

, BM = MC

, AM = MD

Write the conditions for Δ AMB , Δ DMC to be congruent.



(4) **In the opposite figure :**

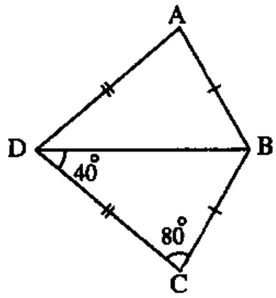
AB = BC , AD = DC

, m (∠ C) = 80°

, m (∠ BDC) = 40°

Prove that : Δ CBD ≡ Δ ABD

, then find : m (∠ ABD)

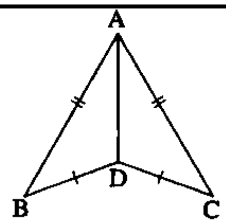


(5) **In the opposite figure :**

AB = AC and

BD = CD

Show that : $\overrightarrow{AD}$ bisects ∠ BAC



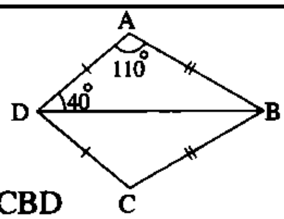
(6) **In the opposite figure :**

BA = BC , DA = DC , m (∠ A) = 110°

and m (∠ ADB) = 40°

(1) Mention the reason of congruency of the two triangles ABD and CBD

(2) **Find :** m (∠ ABC)

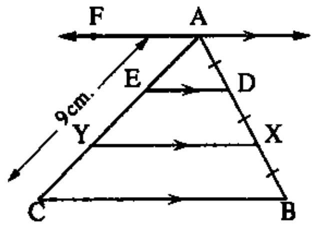


(7) **In the opposite figure :**

$\overleftrightarrow{AF}$ // $\overline{DE}$ // $\overline{XY}$ // $\overline{BC}$

, AD = DX = XB , AC = 9 cm.

Find : The length of $\overline{AY}$ (Give the reason)



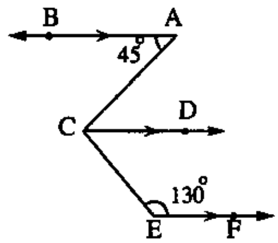
(8) **In the opposite figure :**

$\overrightarrow{AB}$ // $\overrightarrow{CD}$ // $\overrightarrow{EF}$

, m (∠ A) = 45°

, m (∠ E) = 130°

Find : m (∠ ACE)



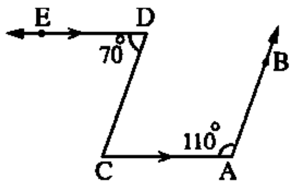
(9) **In the opposite figure :**

$\overrightarrow{DE}$ // $\overline{AC}$, m (∠ A) = 110°

, m (∠ D) = 70°

Find : m (∠ C)

Is $\overrightarrow{AB}$ // $\overline{CD}$? (Give the reason)



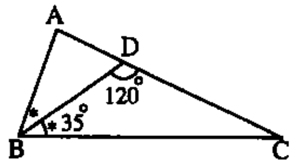
(10) **In the opposite figure :**

$\overrightarrow{BD}$ bisects ∠ ABC

, m (∠ DBC) = 35°

, m (∠ BDC) = 120°

Find : m (∠ A) in degrees.



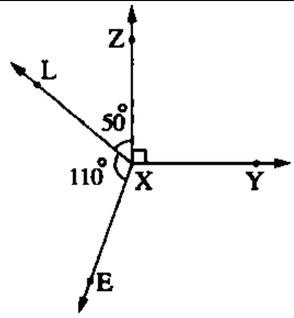
(11) **In the opposite figure :**

m (∠ YXZ) = 90°

, m (∠ ZXL) = 50°

and m (∠ LXE) = 110°

Find with giving the reason : m (∠ YXE)



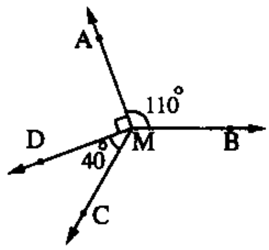
(12) **In the opposite figure :**

m (∠ AMB) = 110°

, m (∠ AMD) = 90°

, m (∠ DMC) = 40°

Find with steps : m (∠ BMC)

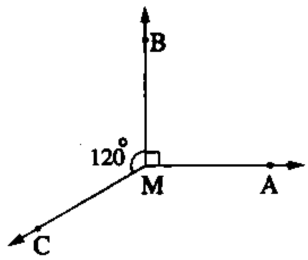


(13) **In the opposite figure :**

m (∠ AMB) = 90° and

m (∠ BMC) = 120°

Find with proof : m (∠ AMC)



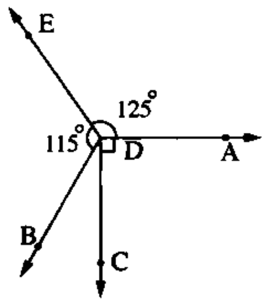
(14) **In the opposite figure :**

Find the measure of the angle CDB where

m (∠ ADE) = 125°

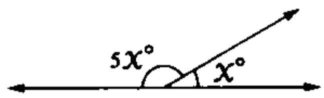
, m (∠ BDE) = 115°

and $\overrightarrow{DA} \perp \overrightarrow{DC}$



(15) **In the opposite figure :**

Find the value of x in degrees.



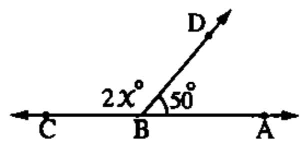
(16) **In the opposite figure :**

$\overleftrightarrow{AC} \cap \overrightarrow{BD} = \{B\}$

, m (∠ ABD) = 50°

, m (∠ DBC) = 2 x°

Find in degrees the value of x

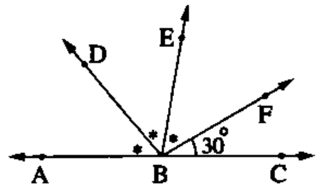


(17) **In the opposite figure :**

B ∈ $\overleftrightarrow{AC}$, m (∠ FBC) = 30°

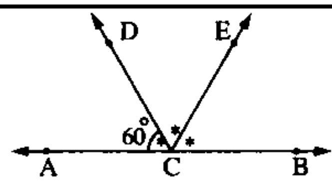
and m (∠ ABD) = m (∠ DBE) = m (∠ EBF)

Find : m (∠ ABE)



(18) **In the opposite figure :**

Are $\overrightarrow{CA}$ and $\overrightarrow{CB}$ on the same straight line ? Why ?



(19) Using the geometric instruments , draw ∠ ABC where m (∠ B) = 80° , then draw $\overrightarrow{BD}$ to bisect it. (Don't remove the arcs).

(20) Using the geometric instruments , draw ∠ ABC of measure 110° , then draw $\overrightarrow{BF}$ to bisect the angle.

THIRD: ACCUMULATIVE SKILLS

Choose the correct answer:

(1) Fifth of the number 5^{10} is ………

ⓐ 5^2 ⓑ 1^{10} ⓒ 5^9 ⓓ 2.5^{10}

(2) If three times of a number is 15, then the fifth of this number is ………

ⓐ 3 ⓑ 75 ⓒ 1 ⓓ 5

(3) 0.0565 ≅ ……………… (to the nearest hundredth)

ⓐ 0.056 ⓑ 0.057 ⓒ 0.06 ⓓ 0.1

(4) $2\frac{1}{5} \times$ ……… = 1

ⓐ $2\frac{1}{5}$ ⓑ $\frac{11}{5}$ ⓒ $\frac{5}{11}$ ⓓ $\frac{5}{2}$

(5) 12 % of 200 kg = …………… kg

ⓐ 12 ⓑ 24 ⓒ 2400 ⓓ 0.06

(6) $\left|\frac{-5}{3}\right|$ ……… zero

ⓐ > ⓑ = ⓒ < ⓓ ≥

(7) The image of the point (-3,5) by translation of 3 units in the negative direction of y-axis is ……………

ⓐ (-3,2) ⓑ (-3,8) ⓒ (-6,5) ⓓ (0,8)

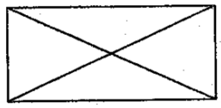
(8) The image of the point (-3,5) by translation of 3 units in the positive direction of y-axis is ……………

ⓐ (-3,2) ⓑ (-3,8) ⓒ (-6,5) ⓓ (0,5)

(9) The volume of a cuboid whose dimensions 2 cm, 5 cm and 4 cm is ……………… cm^3

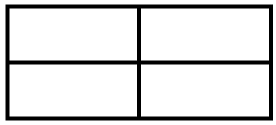
ⓐ 28 ⓑ 11 ⓒ 40 ⓓ 18

(10) The number of triangles in the opposite figure is …………………



ⓐ 2 ⓑ 4 ⓒ 6 ⓓ 8

(11) The number of rectangles in the opposite figure is …………



ⓐ 4 ⓑ 5 ⓒ 7 ⓓ 9

(12) A cube of edge length 5 cm, then its volume = ……… cm^3

ⓐ 5 ⓑ 25 ⓒ 10 ⓓ 125

(13) The two diagonals are perpendicular and equal in length in the …………………

ⓐ rectangle ⓑ rhombus ⓒ square ⓓ trapezium

(14) If the area of a square is 25 cm^2, then its perimeter = … cm

ⓐ 5 ⓑ 10 ⓒ 15 ⓓ 20

(15) The square has ……… axes of symmetry.

ⓐ 1 ⓑ 2 ⓒ 3 ⓓ 4

(16) The cubic centimeter is the measuring unit for ……………

ⓐ perimeter ⓑ area ⓒ volume ⓓ length

(17) The number of edges of a cuboid is ………

ⓐ 6 ⓑ 8 ⓒ 10 ⓓ 12

Best Wishes

1st prep **Final revision**

GEOMETRY

(1)Complete each of the following:

(1) The complement of an angle of measure 43° is an angle of measure ………….°

(2) Two triangles are congruent if two angles ………………….

(3) The straight line that is perpendicular to one of two parallel lines is …………………

(4) If m (∠ B) = 160°, then m (reflex ∠ B) = ……………°

(5) If ∠ A supplements ∠ B and ∠ A ≡ ∠ B , then m (∠ B) = …………°

(6) Two adjacent angles formed by a straight line and a ray with a starting point on this straight line ……………….

(7) The angle whose measure is 46° vertically opposite to an angle whose measure is ……………°

(8) The sum of the measures of the accumulative angles at a point equals …………°

(10) If a straight line intersects two parallel straight lines, then: ……………. , ……………. , ………………..

(11) The axis of symmetry of a line segment is ……………….

(12) Two polygons are congruent if there is a correspondence between their vertices such that …………….

(13) If two straight lines are on the same plane and do not intersected, then they are …………………

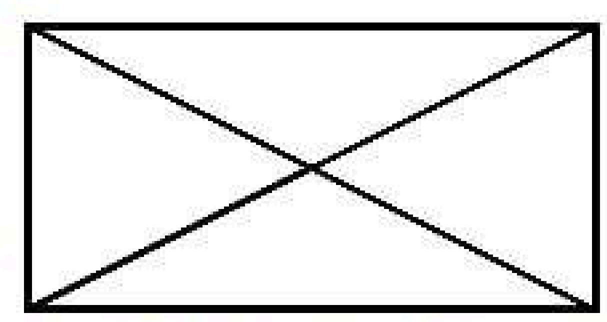
(14) If $\angle A$ and $\angle B$ are two complementary angles and m ($\angle A$) = m ($\angle B$), then m ($\angle A$) = …………….$^\circ$

(15) If ▲ ABC $\equiv$ ▲ XYZ, then $\overline{AC}$ $\equiv$ …………….

(16) If m ($\angle X$) = $\frac{1}{2}$ m ($\angle Y$) and m ($\angle X$) = 60°, then the two angles X and Y are ………………… angles

(17) If $\angle A$ supplements $\angle B$ and $\angle A \equiv \angle B$, then m ($\angle B$) = …………$^\circ$

(18) The number of triangles In the opposite figure equals ………………



(19) If a straight line intersects two parallel straight lines, then each two alternate angles are ………………………….

(20) The two bisectors of two adjacent supplementary angles are ……

(21) If the polygon ABCDE $\equiv$ the polygon XYZEF, then BC = ………….

(22) The two right –angled triangles are congruent if ……………………

(23) The two perpendicular straight lines form 4 …………. angles

(24) The diagonals are perpendicular in each of ………… and …………

(25) If two adjacent angles supplementary, then their outer sides are ……………………..

(26) The two vertically opposite angles are ……………….. in measure

(27) If $\overline{AB} \equiv \overline{CD}$, then AB – CD = ……………….

(28) If m (∠ A) = 100°, then m (reflex ∠ A) = …………….°

(29) If two straight lines are parallel to a third straight line, then they are ………………..

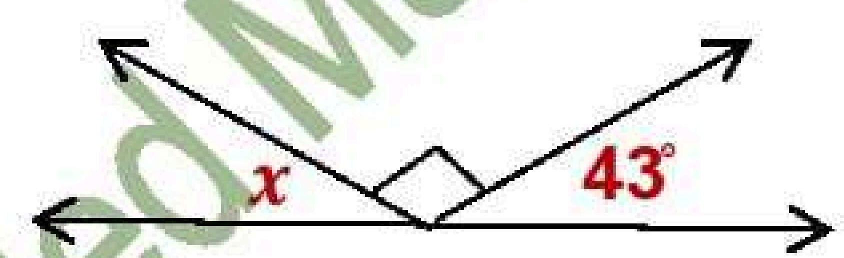
(30) The measure of a straight angle equals …………..

(31) If a straight line intersects two parallel straight line, then each two corresponding angles are ………………….. in measure

(32) If ∠ B complements ∠ A and ∠ B ≡ ∠ A , then m (∠ A) = ……….

(33) If AB = XY, then $\overline{AB}$ ……….. $\overline{XY}$

(34) In the opposite figure: x = ………...°



(35) If ∠ A and ∠ B are supplementary angles and, m (∠ A) = 2 m (∠B), then m (reflex ∠ A) = …………….

(2)Choose the correct answer:

(1) The angle whose measure is more than 180° and less than 360° is called …………..

(a). acute (b) obtuse (c) straight (d) reflex

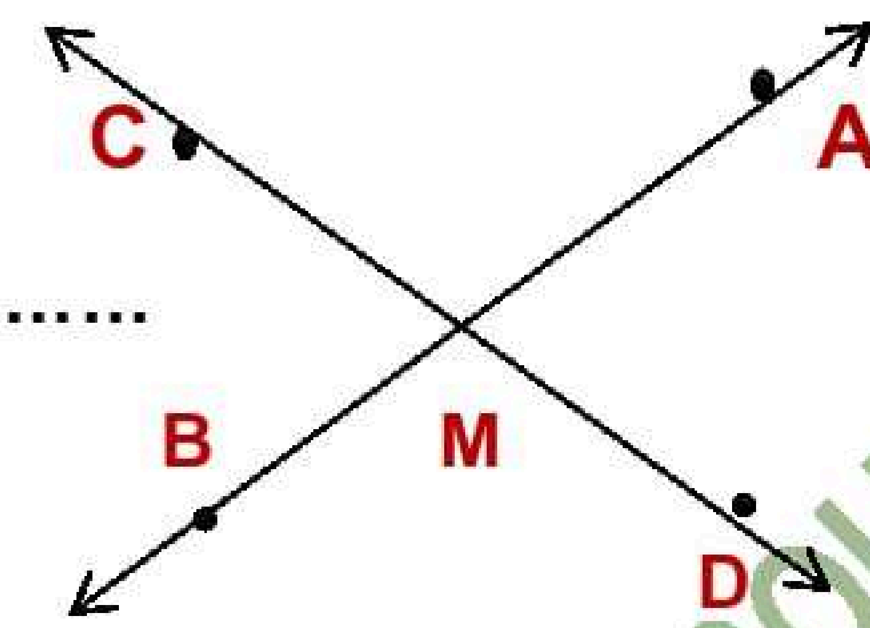
(2) The sum of the measures of the accumulative angles at a point is ………………

(a) 90° (b) 180° (c) 270° (d) 360°

(3) The supplement of an angle of measure 30° is an angle of measure ………………

(a) 30° (b) 60° (c) 120° (d) 150°

(4) The two angles AMD, BMC are called ………



(a) Vertically opposite angles (b) adjacent

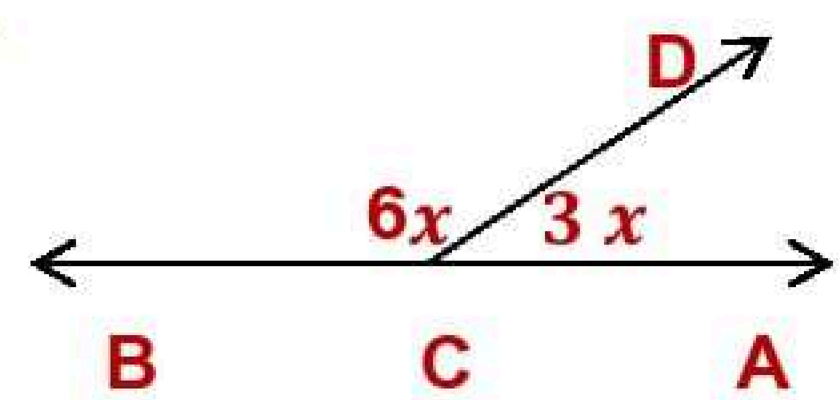
(c) alternate (d) corresponding

(5) The triangle whose perimeter is 12 cm. and the lengths of two of its sides are 2 cm, 5 cm is …………….

(a) scalene (b) right (c) equilateral (d) isosceles

(6) In the opposite figure:

If $\overleftrightarrow{AB} \cap \overleftrightarrow{CD}$ = {C} , then x = …………



(a) 20° (b) 30° (c) 90° (d) 120°

(7) If $\overleftrightarrow{AB}$ // $\overleftrightarrow{XY}$, then $\overleftrightarrow{AB} \cap \overleftrightarrow{XY}$ = ………….

(a) {B} (b) $\overline{AX}$ (c) Ø (d) {Y}

(8) If the ratio between two supplementary angles is 4 : 5 , then the measure of the greater angle = ……………..

(a) 80° (b) 100° (c) 120° (d) 150°

(9) The two lines which are parallel to a third line are …………….

(a) perpendicular (b) parallel (c) equal (d) intersect

(10) If ▲ ABC ≡ ▲XYZ and m (∠ A) + m (∠ B) = 130°, then m (∠ Z) = …..

(a) 50°　　(b) 65°　　(c) 130°　　(d) 180°

(11) The angle of measure 70° complements an angle of measure ……

(a) 90°　　(b) 20°　　(c) 110°　　(d) 180°

(12) If the two triangles ABC and XYZ are congruent, then …………….

(a) AB = YZ　　(b) BC = XZ　　(c) YX = CA　　(d) ZY = CB

(13) If $L_1 // L_2$, $L_3 \perp L_1$, then …………….

(a) $L_3 \perp L_2$　　(b) $L_1 // L_3$　　(c) $L_2 \perp L_1$　　(d) $L_2 // L_3$

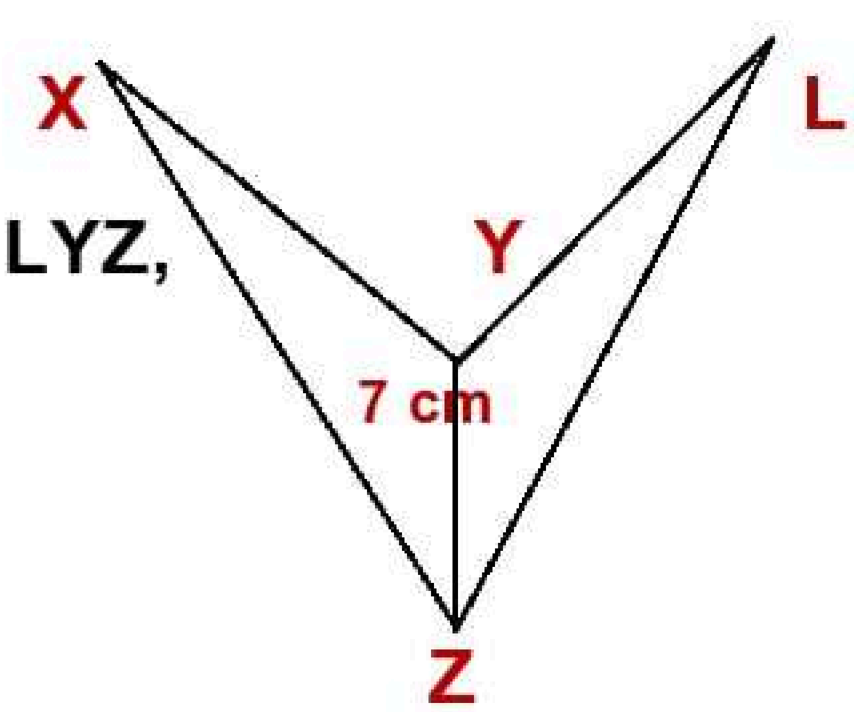
(14) If $\overline{AB} \equiv \overline{CD}$ and AB = 5 cm, then 2 AB – CD = …………. cm

(a) 5　　(b) zero　　(c) 15　　(d) 10

(15) The acute angle supplements an ……………… angle

(a) acute　　(b) obtuse　　(c) right　　(d) reflex

(16) In the opposite figure the perimeter Of figure XYLZ = 30 cm and ▲ XYZ ≡ ▲ LYZ, YZ = 7 cm, then the perimeter of ▲ XYZ = …………….. cm



(a) 15　　(b) 19　　(c) 22　　(d) 23

(17) **The two angles of measure 140°, 40° are ………….**

(a) complementary (b) supplementary (c) adjacent (d) reflex

(18) $\overrightarrow{AB} \subset$ ………………

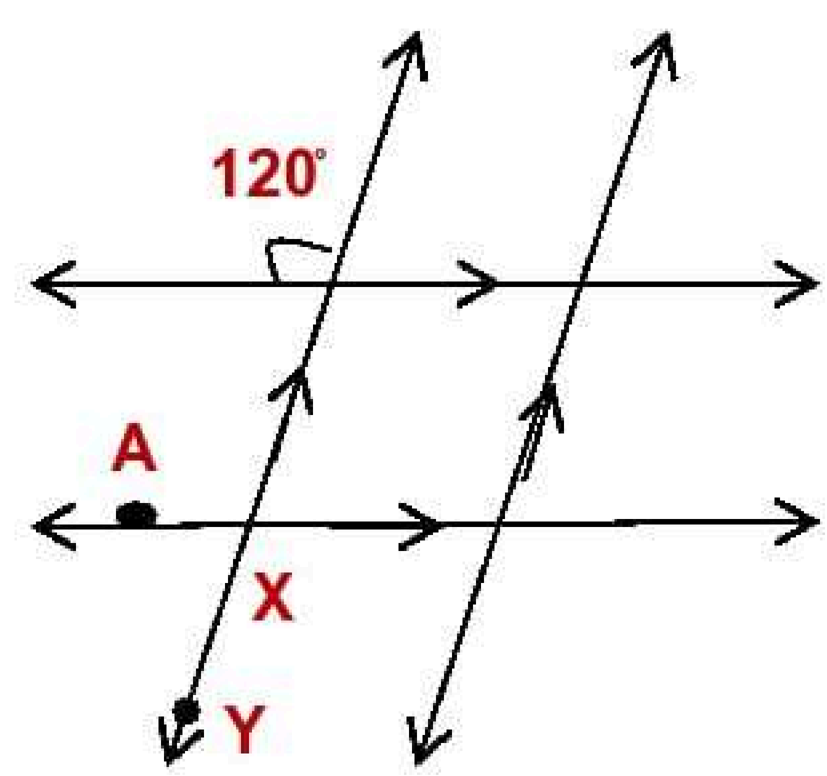
(a) $\overleftrightarrow{AB}$ (b) $\overline{AB}$ (c) $\overrightarrow{BA}$ (d) AB

(19) **If $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ lie in the same plane and $\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \emptyset$, then $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are ………………….**

(a) perpendicular (b) intersecting (c) coincident (d) parallel

(20) **In the opposite figure:**

m (∠ AXY) = ……………..



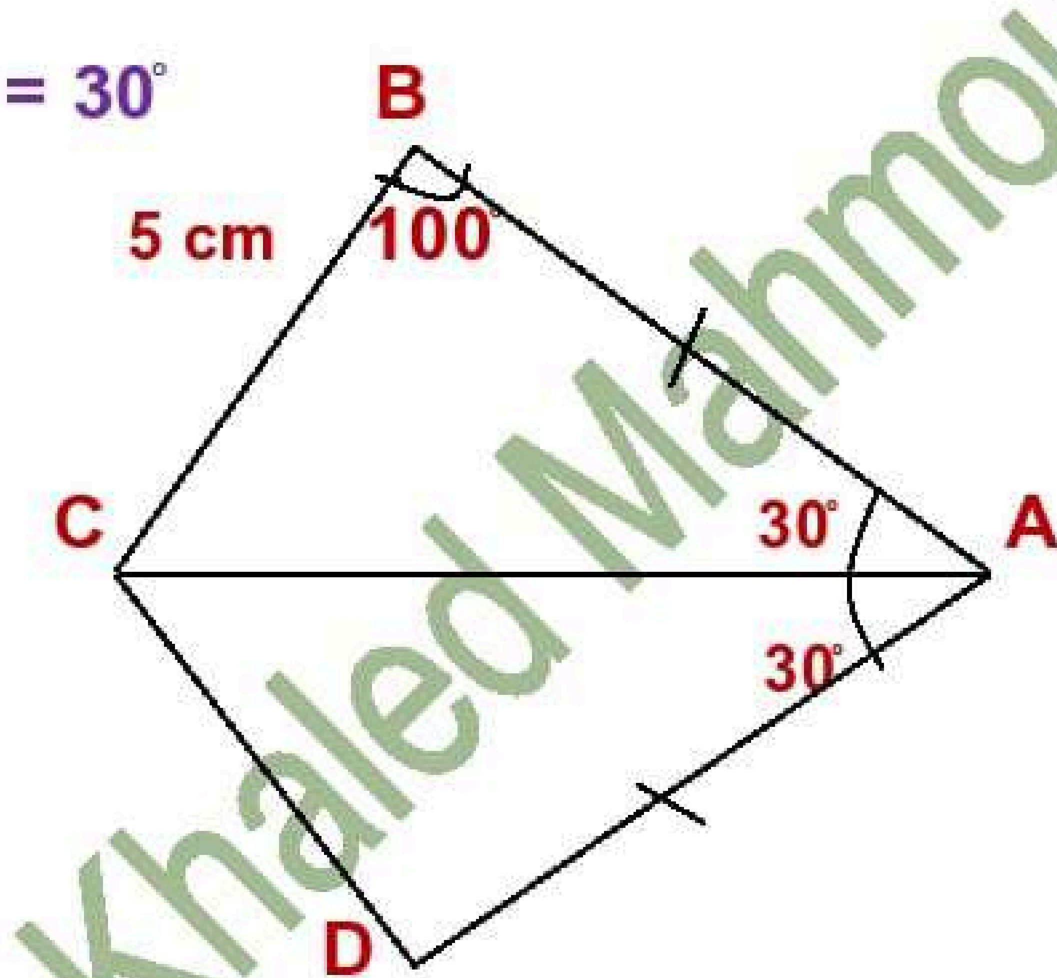
(a) 30° (b) 60°

(c). 90° (d) 120°

(1)In the opposite figure:

AB = AD, BC = 5 cm,

m (∠ B) = 100°, m (∠ BAC) = m (∠ DAC) = 30°



(1) Is ▲ BAC ≡ ▲ DAC? Why?

(2) Find : m (∠ D)

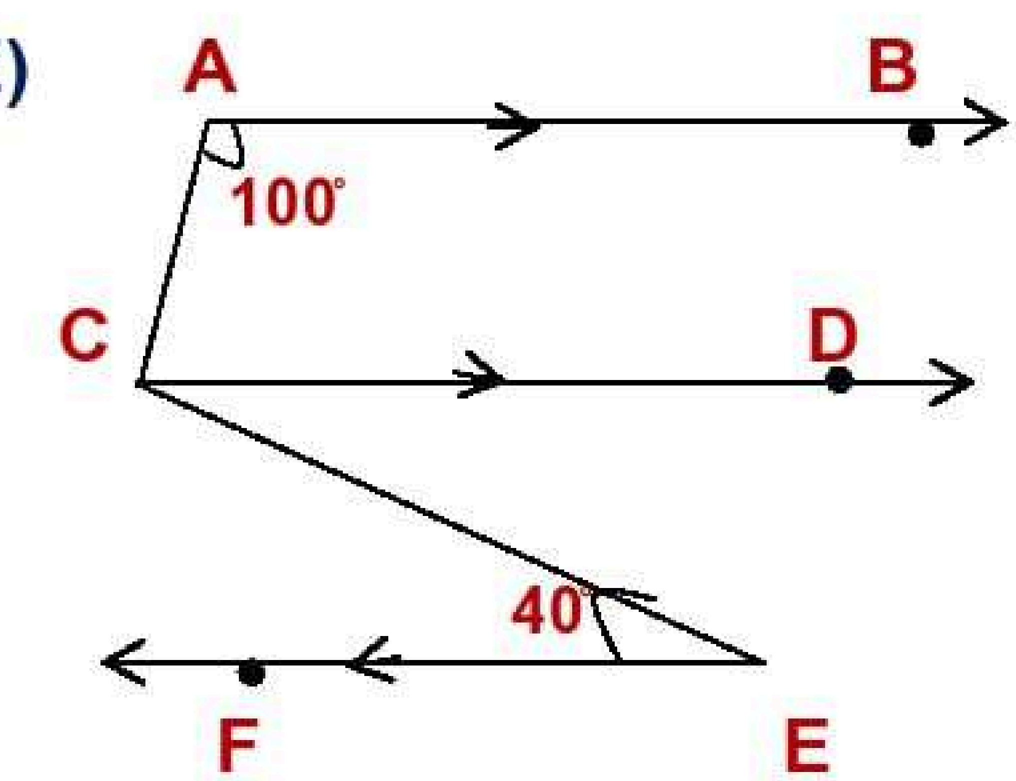
(3) Find: the length of $\overline{CD}$

(2)In the opposite figure:

$\overrightarrow{AB}$ // $\overrightarrow{CD}$ // $\overrightarrow{EF}$,

m (∠ BAC) = 100° and m (∠ CEF) = 40°

Find with given reasons: m (∠ ACE)



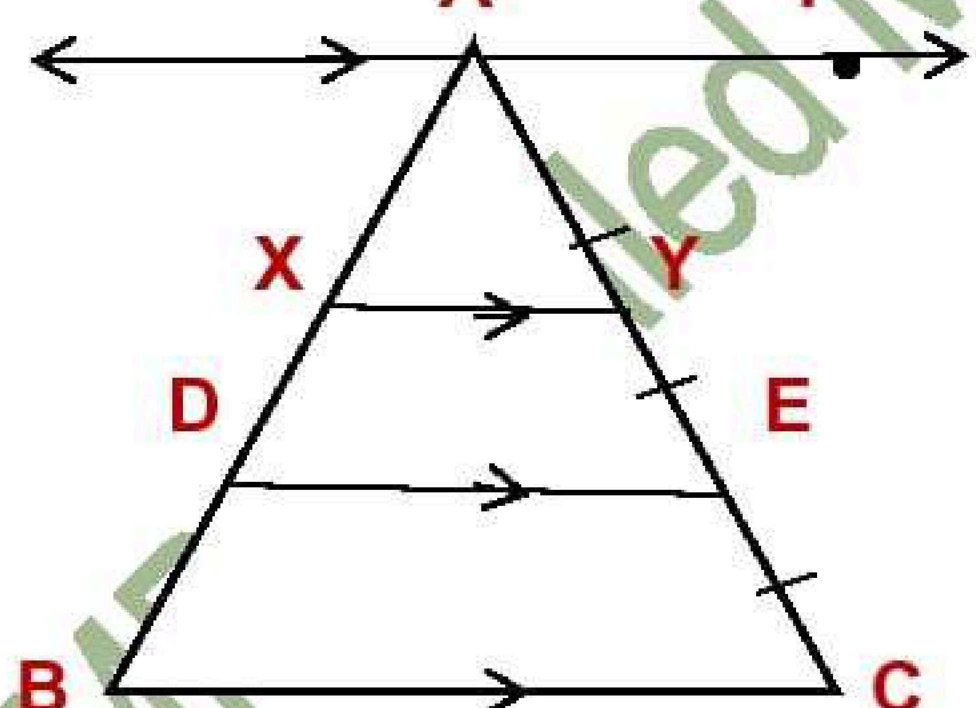
(3)In the opposite figure:

If $\overleftrightarrow{AF} // \overleftrightarrow{XY} // \overleftrightarrow{DE} // \overleftrightarrow{BC}$,

AY = YE = EC = 3 cm,

AX = 2 cm. and the perimeter of ▲ ABC = 23 cm

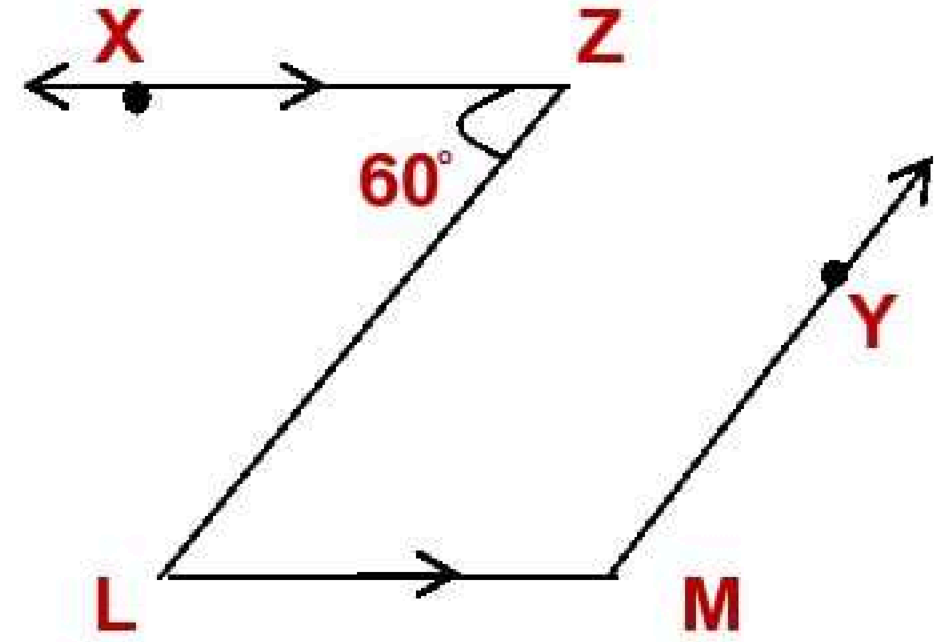
Find: the length of $\overline{BC}$



(4)In the opposite figure:

$\overrightarrow{ZX} // \overline{LM}$, m (∠ Z) = 60°

m (∠ M) = 120°



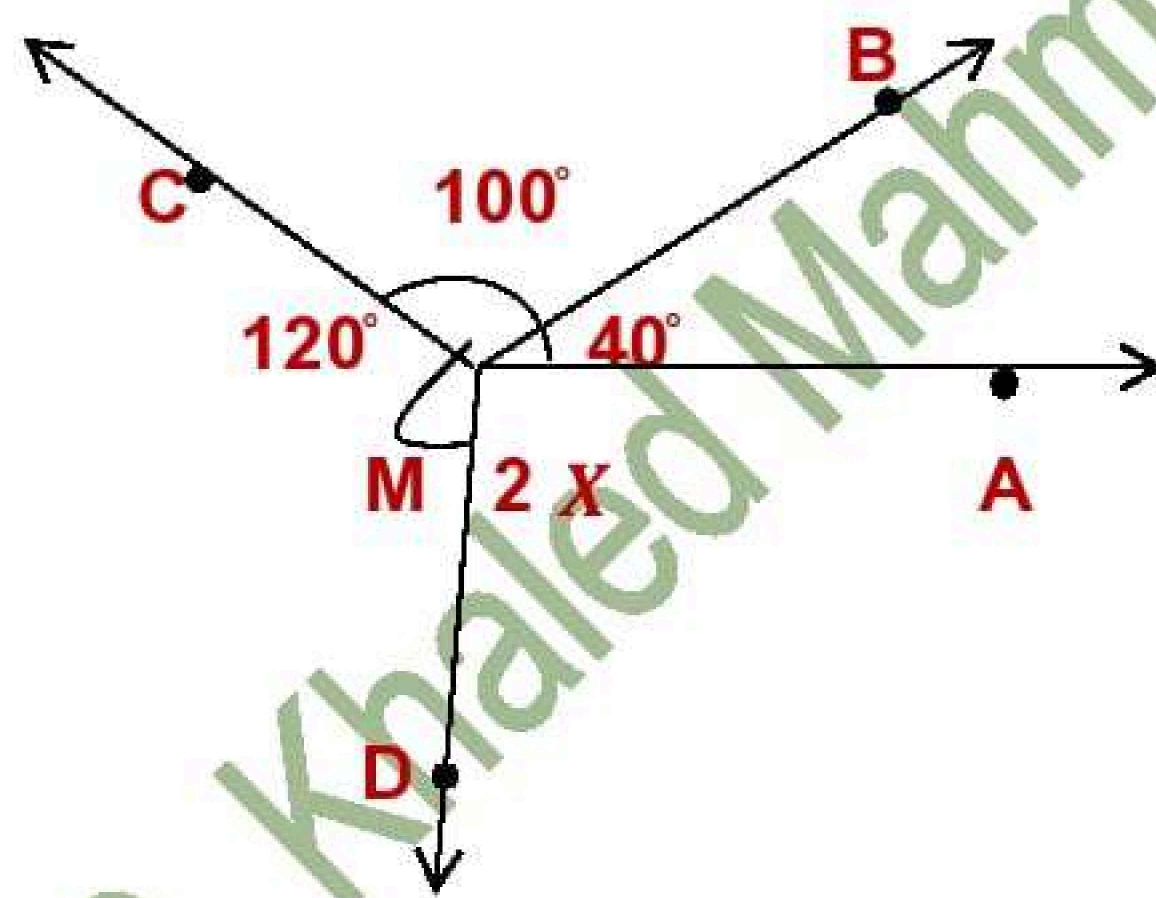
Prove that $\overline{LZ} // \overrightarrow{MY}$

(5)In the opposite figure:

m (∠ AMB) = 40°, m (∠ BMC) = 100°,

m (∠ CMD) = 120° and m (∠ AMD) = 2x

Find: The value of x

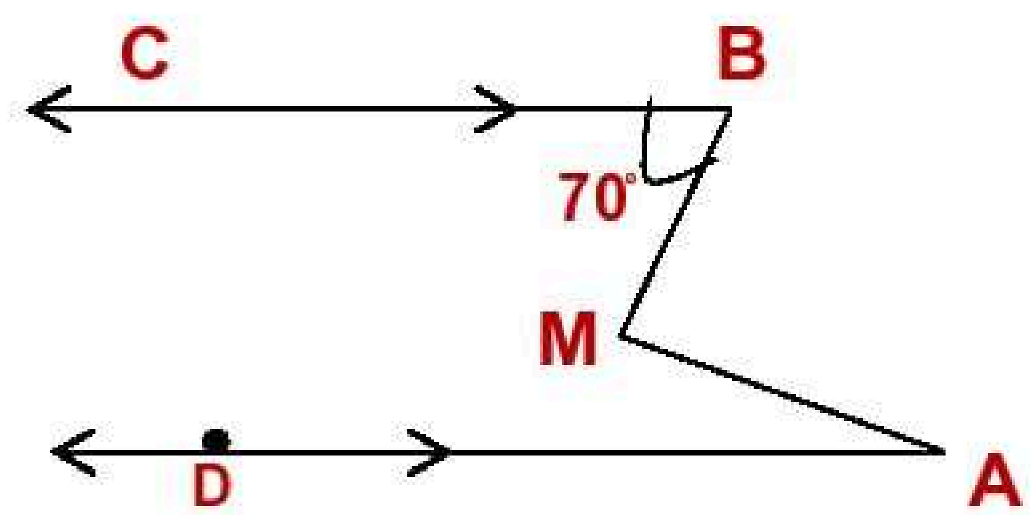


(6)In the opposite figure:

$\overrightarrow{BC} \parallel \overrightarrow{AD}$, m (∠ CBM) = 70°

m (reflex ∠ BMA) = 240°

Find: m (∠ MAD)

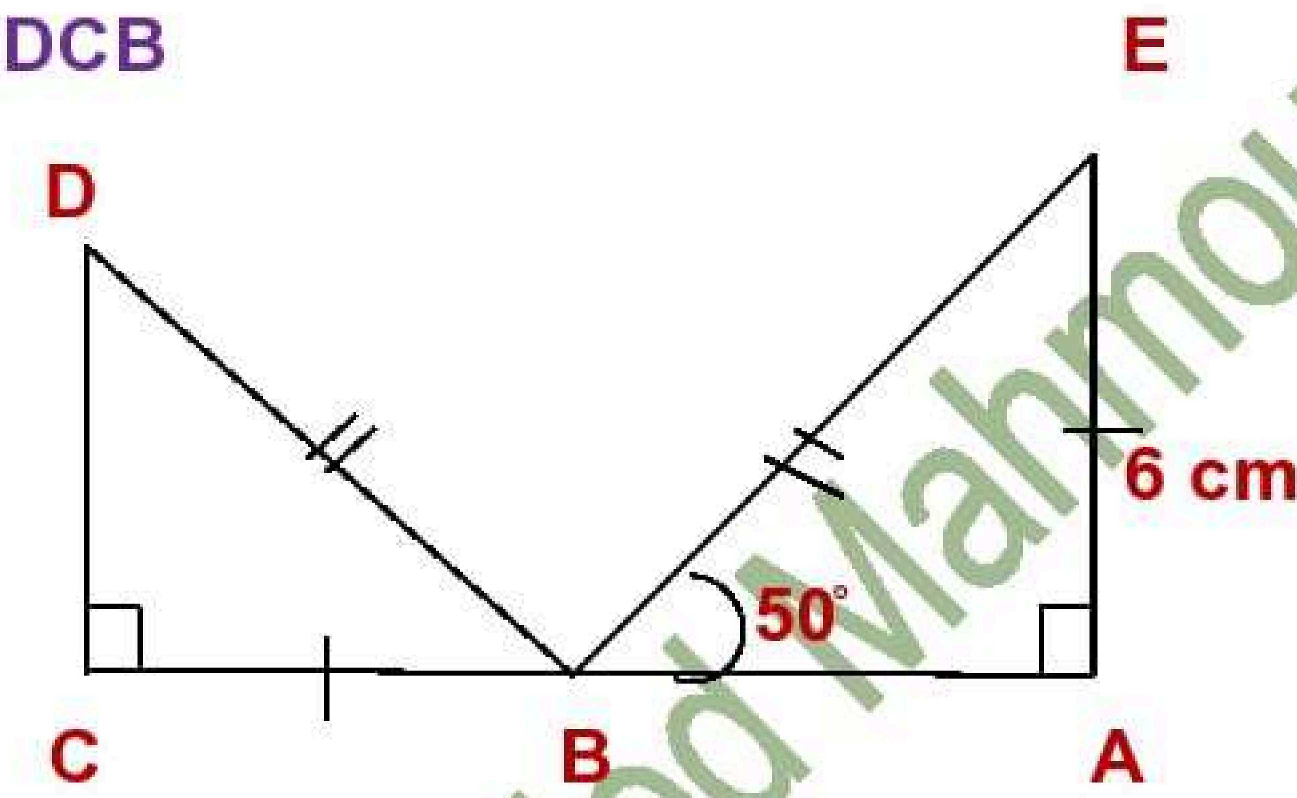


(7)In the opposite figure:

(1) Prove that : ▲ BAE ≡ ▲ DCB

(2) Find: m (∠ BDC)

(3)Find: The length of $\overline{BC}$

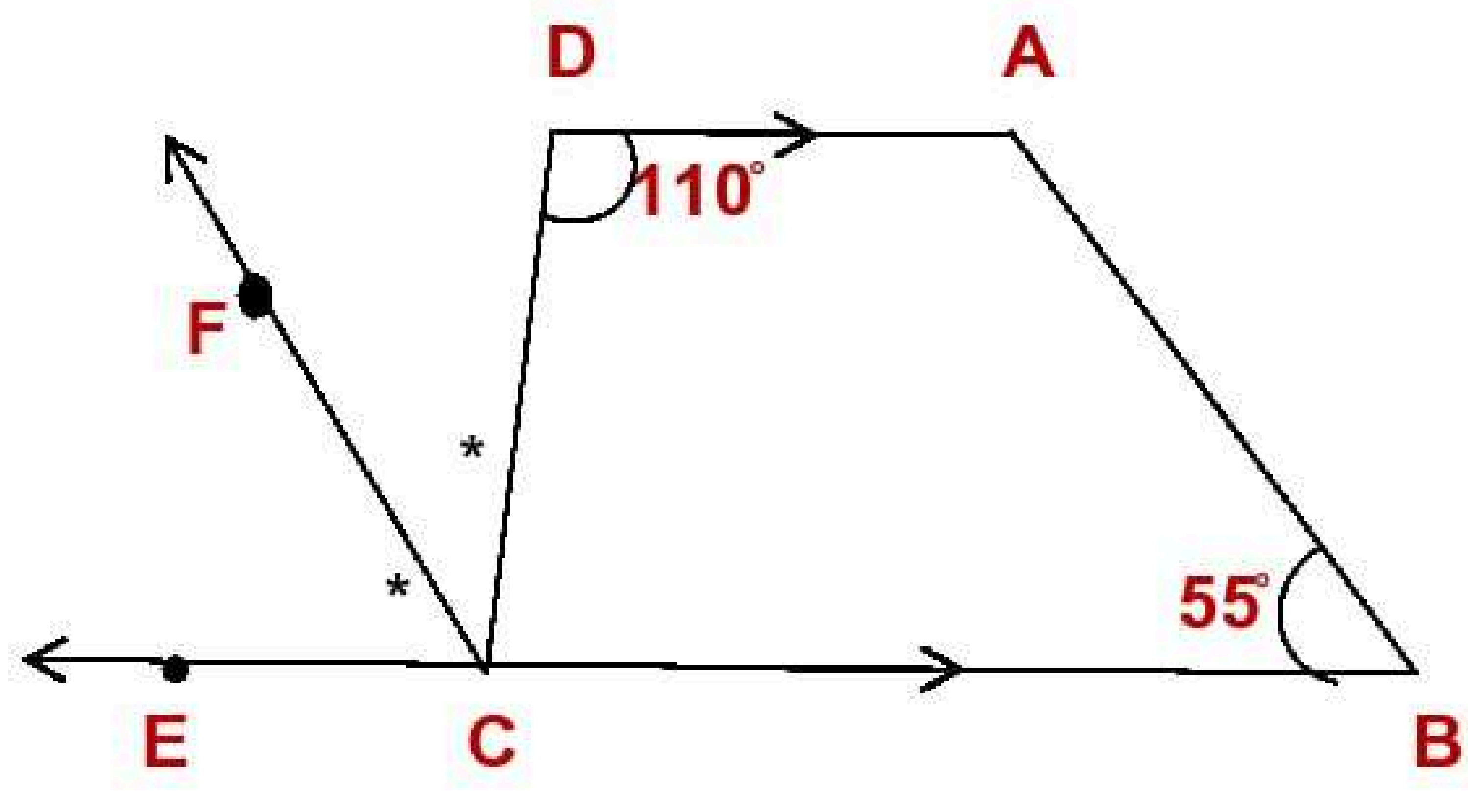


(8)In the opposite figure:

$\overline{AD}$ // $\overrightarrow{BC}$, $\overrightarrow{CF}$ bisects ∠ DCE , E ∈ $\overrightarrow{BC}$,

m (∠ ABC) = 55°, m (∠ ADC) = 110°

Is $\overline{AB}$ // $\overrightarrow{CF}$? Why?



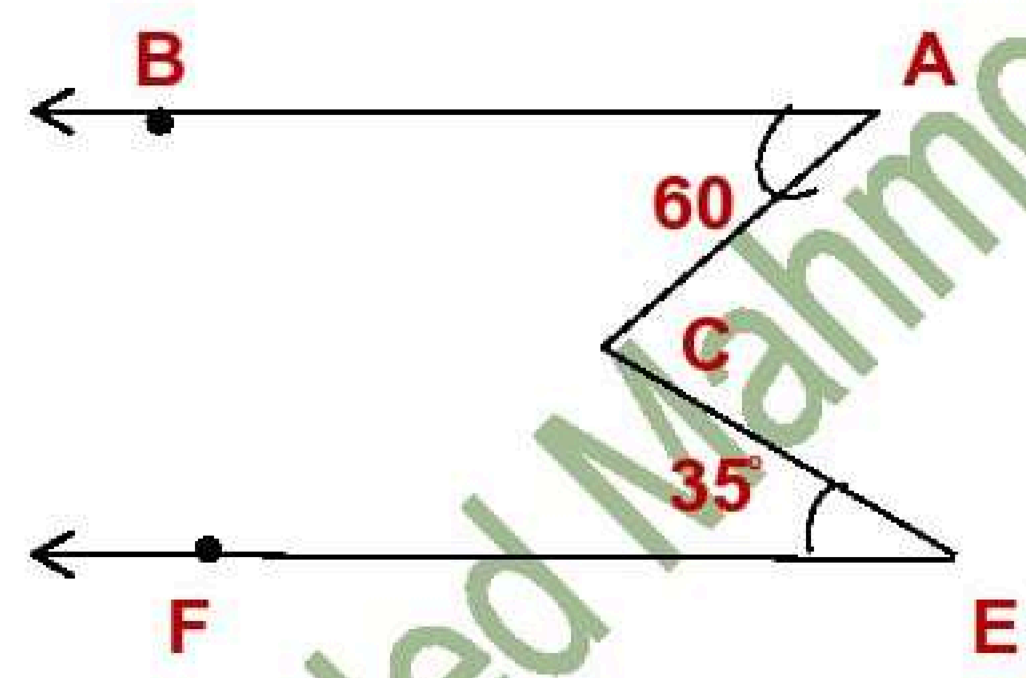
(9)In the opposite figure:

$\overrightarrow{AB} \parallel \overrightarrow{EF}$, m (∠ A) = 60° ,

m (∠ E) = 35°

Find:

m (reflex ∠ ACE)

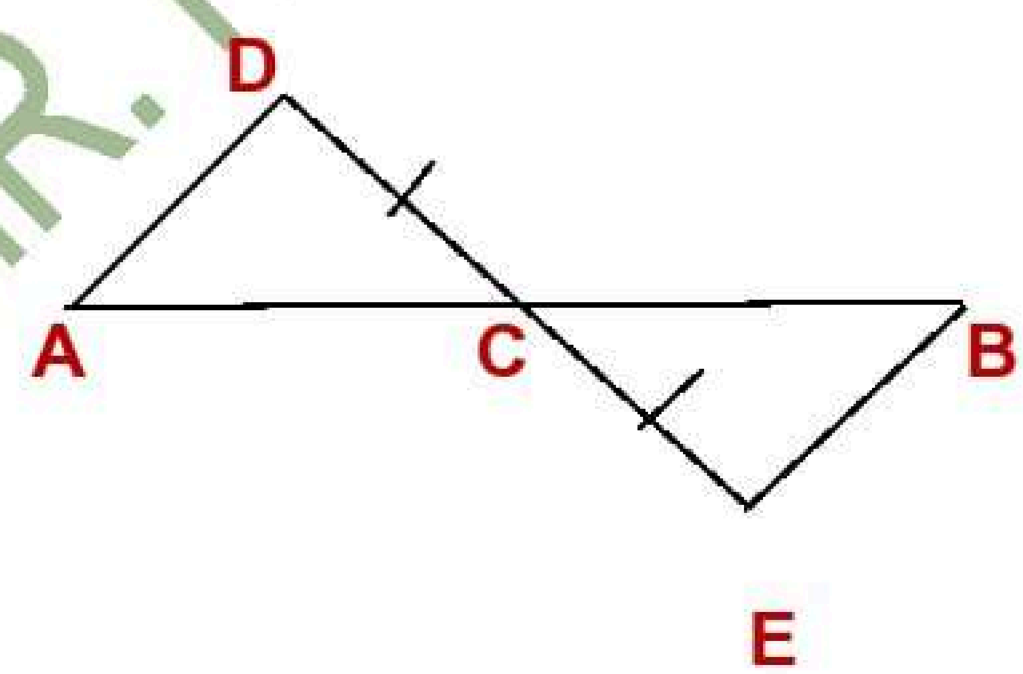


(10)In the opposite figure:

$\overline{AB} \cap \overline{DE}$ = {C}, EC = DC

, m (∠ E) = m (∠ D)

Show that : ▲ ACD ≡ ▲ BCE

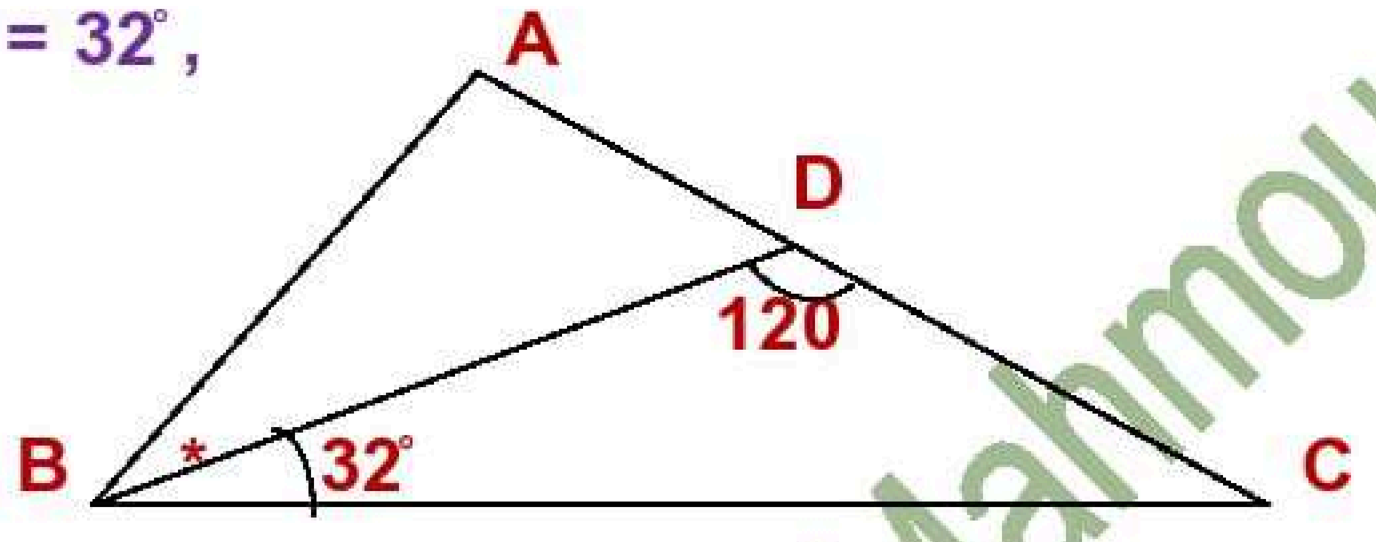


(11)In the opposite figure:

$\overrightarrow{BD}$ bisects ∠ ABC, m (∠ CBD) = 32°,

m (∠ BDC) = 120°

Find: m (∠ A)



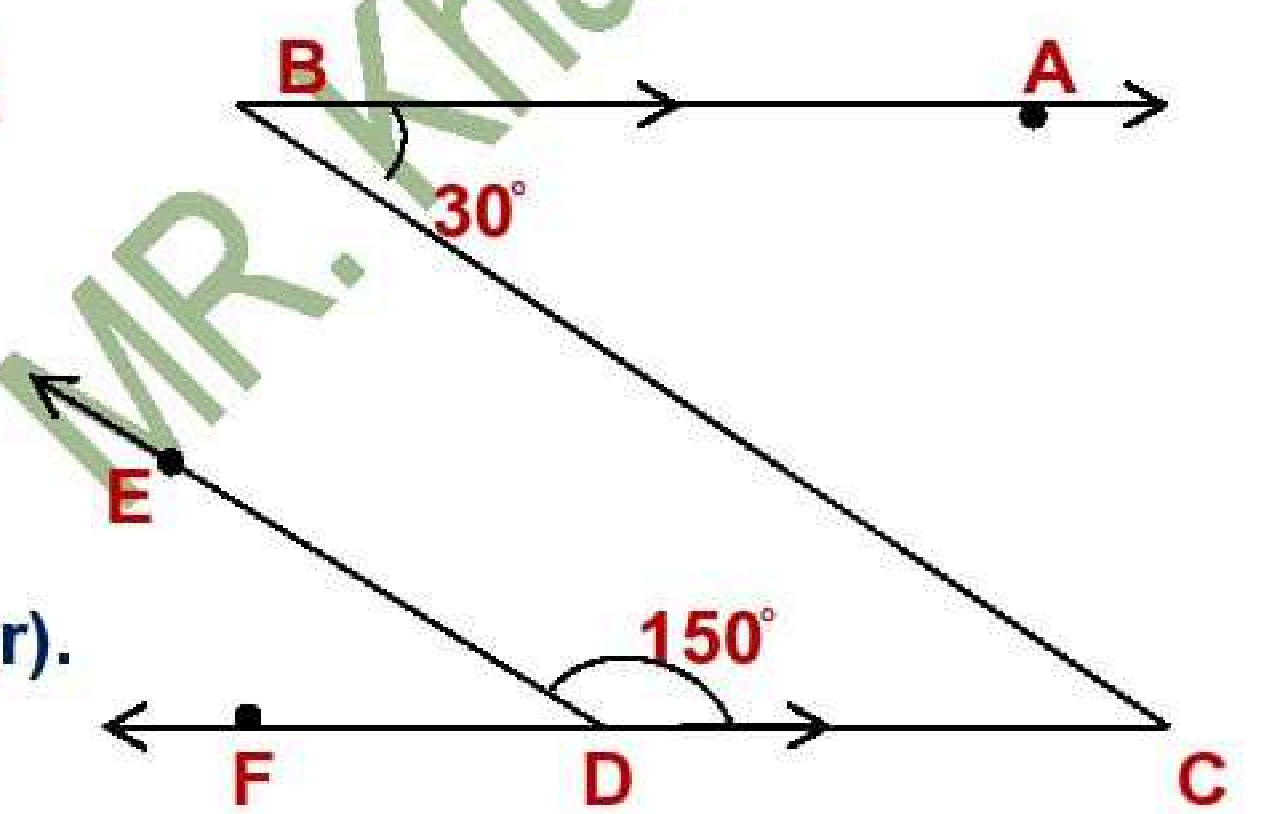
(12)In the opposite figure:

$\overrightarrow{BA}$ // $\overrightarrow{CD}$, m (∠ ABC) = 30°,

m (∠ EDC) = 150°

Is $\overrightarrow{DE}$ // $\overline{CB}$? Why?

(Write the steps of your answer).



Part (1)

Exercise (1)

(1) Choose the correct answer:

1) The acute supplements ……………. angle.

a) acute b) obtuse c) right d) reflex

2) The right angle complements angle whose measure is ………….

a) 0° b) 45° c) 90° d) 180°

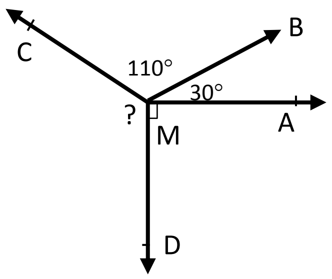
3) If m (∠ A) = 2 m (∠ B) , A complements ∠ B , then m (∠ A) = ….

a) 15° b) 30° c) 45° d) 60°

4) If the ratio between two supplementary angles is 4 : 5 , then the measure of the greater angle is …………….

a) 80° b) 100° c) 120° d) 150°

(2) In the figure opposite:

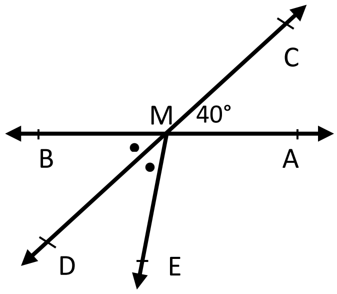


m (∠ AMB) = 30°, m (∠ BMC) = 110°

and m (∠ AMD) = 90°.

Find m (∠ CMD)

(3) In the figure opposite:



$\overleftrightarrow{AB} \cap \overleftrightarrow{CD}$ = {M} , m (∠ AMC) = 40° and

$\overrightarrow{MD}$ bisects ∠ BME.

Find m (∠ AME)

Exercise (2)

(1) Complete:

1) The measure of the straight angle equals ……………

2) The angle whose measure is 36° complements an angle of measure ………… and supplements an angle of measure ……….

3) If the two outer sides of two adjacent angles are on the same straight line, then the two angles are ……………

4) The sum of the measure of the accumulative angles at a point is …………… .

5) The angle whose measure is greater than 180° but less than 360° is called ……………

(2) Choose the correct answer:

1) If m (∠ A) = 90°, then m (reflex ∠ A) = ……………

a) 0° b) 90° c) 180° d) 270°

2) The measure of the straight angle equals ……………

a) 90° b) 180° c) 270° d) 360°

3) The angle whose measure is 179°, its type is ……………

a) acute b) right c) obtuse d) straight

4) The sum of the measures of two adjacent angles formed by a straight line and a ray is ……………

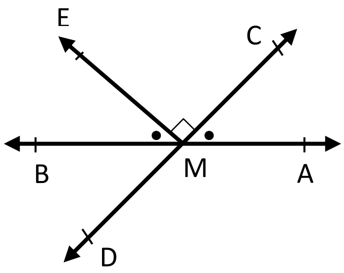
a) 90° b) 180° c) 270° d) 360°

(3) In the figure opposite:

$\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \{ M \}$, m (∠ CME) = 90°,

m (∠ AMC) = m (∠ EMB)

Find: m (∠ AMC) , m (∠ BMD) , m (∠ AMD)



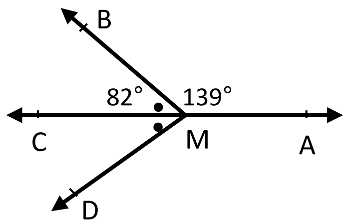
(4) In the figure opposite:

$\overrightarrow{MC}$ bisects ∠ BMD , m (∠ BMD) = 82°,

m (∠ AMB) = 139°

Prove that:

MA , MC are on the same straight line.



Exercise (3)

(1) Complete:

1) The acute angle is the angle whose measure is less than ……….

and more than …………….

2) The two complement angles whose sum of their measures is ……….

3) The two adjacent angles formed by a straight line and a ray ……

4) If two straight lines intersect, then two vertically opposite angles

are …………….

(2) Choose the correct answer:

1) The angle whose measure is 37° complements an angle measure

…………….

a) 37° b) 53° c) 63° d) 143°

2) The type of the angle whose measure equals 89°, is …………….

a) acute b) right c) obtuse d) reflex

3) If m (∠ A) + m (∠ B) = 180°, then ∠ A and ∠ B are …………….

a) adjacent b) complementary

c) supplementary d) equal in measure

4) The sum of the measures of the accumulative angles at a point equals …………….

a) 90° b) 180° c) 270° d) 360°

5) If the ratio between two adjacent and supplementary angles is 1 : 2, then the measure of the smaller angle is …………….

a) 30° b) 60° c) 120° d) 150°

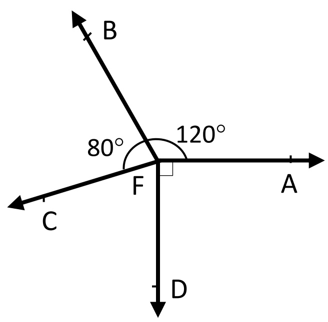
(3) In the figure opposite:

m (∠ AFB) = 120° ,

m (∠ BFC) = 80° , and

m (∠ AFD) = 90°

Find: m (∠ CFD)

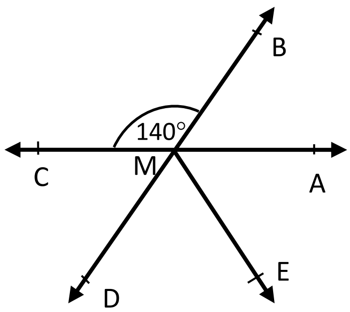


(4) In the figure opposite:

$\overleftrightarrow{AC} \cap \overleftrightarrow{BD} = \{M\}$,

$\overleftrightarrow{ME}$ bisect (∠ AMD)

Find: (∠ AMD) , m (∠ AME)



Exercise (4)

(1) Complete:

1) The two triangles are congruent if two sides and ………….. are congruent with their corresponding in the other triangle.

2) The two right-angled triangles are congruent if …………..

3) Two triangles are congruent if two angles and ………….. are congruent with their corresponding in the other triangle.

4) Two triangles are congruent if each ………….. of one triangle are congruent with their corresponding in the other triangle.

5) If the two triangles ABC and DEF are congruent, then: BC = ….., m (∠ E) = m (∠ …….)

6) If DE = XY, DF = XZ and m (∠ D) = m (∠ X), then ΔΔ (….., …..) are congruent.

7) The two triangles XYZ and MNL are congruent, if YZ = 8 cm, m (∠ Y) = 40° then in the other triangle: …….. = 8 cm, m (∠ ….....) = 40°

(2) Choose the correct answer:

1) Two triangles are congruent if ………… are congruent.

a) two corresponding sides.

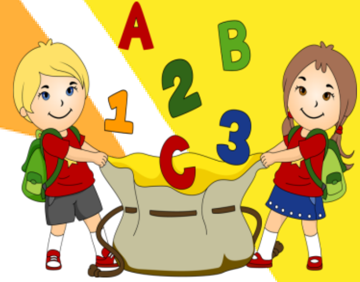
b) two corresponding sides and the included angle.

c) their corresponding angles.

2) If AB = DF = 5 cm, AC = DE = 7 cm, m (∠ A) = m (∠ D) = 55° then the two triangles ABC, DFE are congruent with …………

a) two sides and included angle   b) three sides

c) two angles   d) hypotenuse and a side

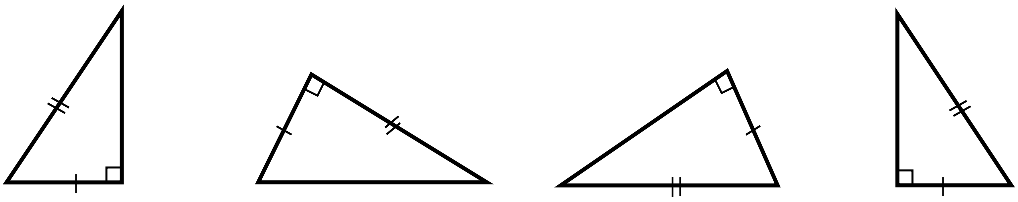


3) If the two triangles ABC, XYZ are congruent, then …………

a) AB = YZ　　　b) BC = XZ

c) YX = CA　　　d) ZY = CB

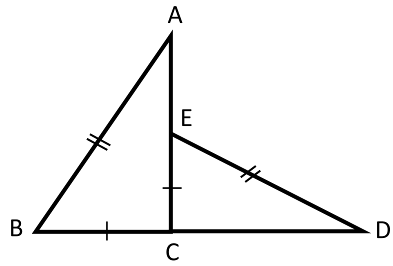
4) The following triangles are congruent except figure(…………):



(1)　　(2)　　(3)　　(4)

5) In the figure opposite:

If AB = DE , BC = EC, then m (∠ A) = …………



a) m (∠ B)　　　b) m (∠ D)

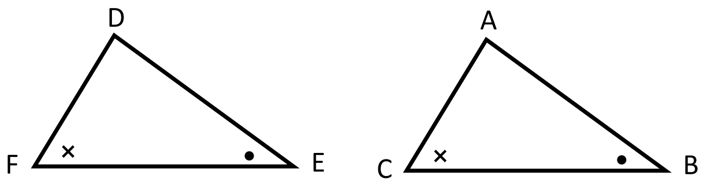
c) m (∠ DEC)　　　d) m (∠ ACD)

6) In the figure opposite: The necessary condition to make Δ ABC, Δ DEF are congruent if:

a) AB = DE　　　b) AC = DF

c) BC = EF

d) m (∠ A) = m (∠ D)



7) In the following figure: pair of congruent triangles is figure (………..):

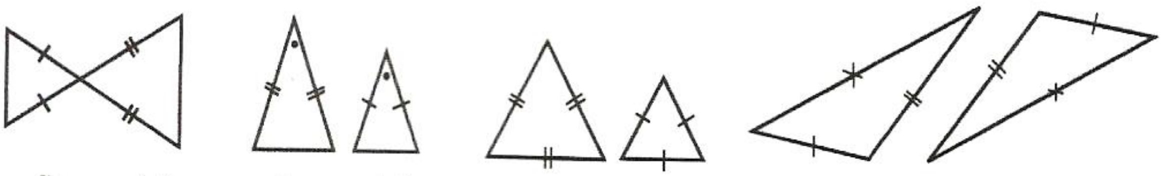


figure (1)　　figure (2)　　figure (3)　　figure (4)

(3) In the figure below: Are the two triangles congruent?

(given reason),

Note: The similar signs denote the congruency of the elements marked by them.

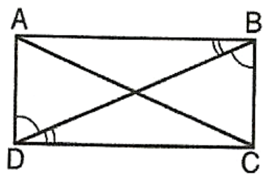


figure (1)

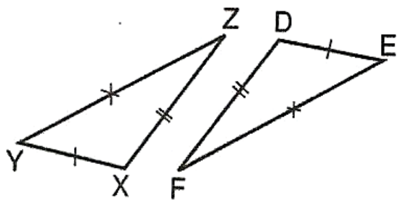


figure (2)

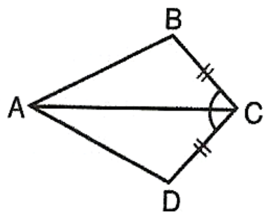


figure (3)

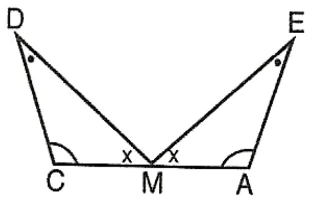


figure (4)

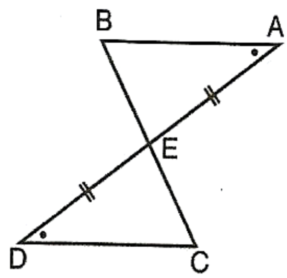


figure (5)

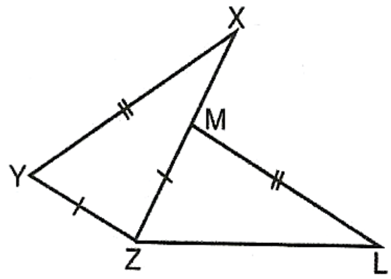


figure (6)

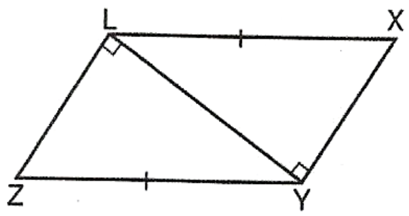


figure (7)

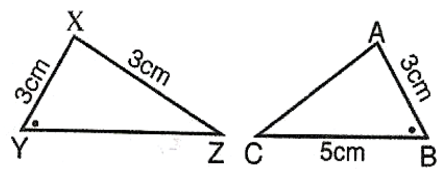


figure (8)

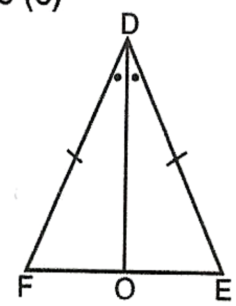


figure (9)

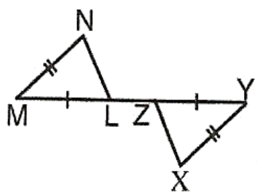


figure (10)

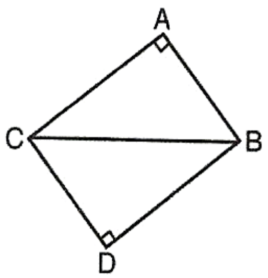


figure (11)

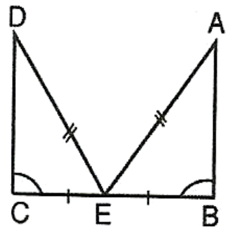


figure (12)

Part (2)

(1) Complete the following:

1) If a straight line intersects two parallel straight lines, then every two interior angles on one side of the transversal are ……………

2) Two straight lines are parallel if they are cut by a transversal such that the two interior angles on one side of the transversal …………

3) If two straight lines are parallel to a third straight line, then these two straight lines ……………

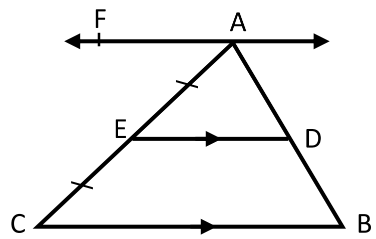
4) A straight line that is perpendicular to one of two parallel lines is ……………

5) The two straight lines perpendicular to a third one are ……………

6) In the figure opposite:

If AB = 3 cm

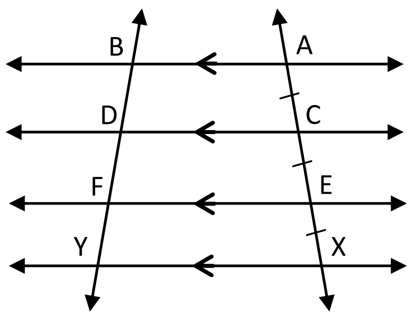
then BD = …………… cm

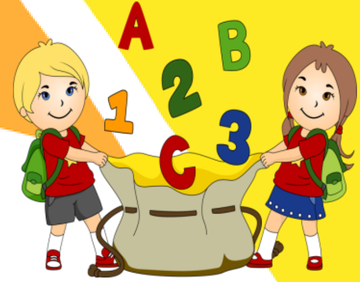


7) In the figure opposite:

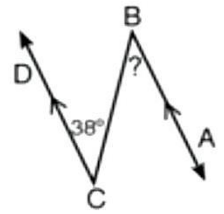
If BF = 2 cm

then BY = ………… cm





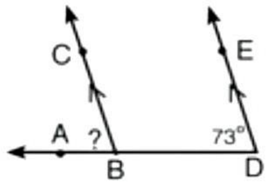
(2) In each of the following figures, find m (∠ ABC):



$\overrightarrow{BA}$ // $\overrightarrow{CD}$

m (∠ BCD) = 38°

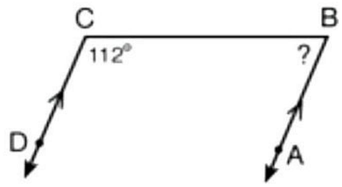
figure (1)



$\overrightarrow{DE}$ // $\overrightarrow{BC}$

m (∠ EDB) = 73°

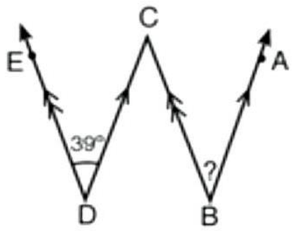
figure (2)



$\overrightarrow{BA}$ // $\overrightarrow{CD}$

m (∠ BCD) = 112°

figure (3)

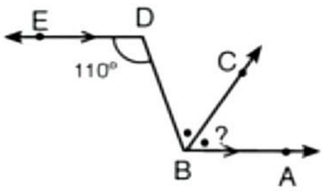


$\overrightarrow{BA}$ // $\overrightarrow{DC}$

$\overrightarrow{BC}$ // $\overrightarrow{DE}$

m (∠ CDE) = 39°

figure (4)

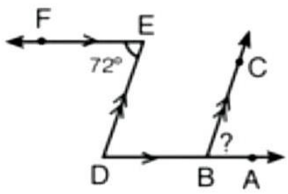


$\overrightarrow{BA}$ // $\overrightarrow{DE}$

$\overrightarrow{BC}$ bisects ∠ ABD

m (∠ BDE) = 110°

figure (5)



$\overrightarrow{DA}$ // $\overrightarrow{EF}$

$\overrightarrow{BC}$ // $\overrightarrow{DE}$

m (∠ DEF) = 72°

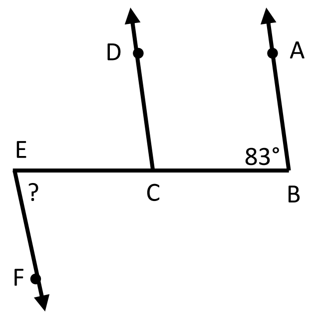
figure (6)

(3) In the opposite figure:

$\overrightarrow{BA}$ // $\overrightarrow{CD}$, $\overrightarrow{CD}$ // $\overrightarrow{EF}$

and m (∠ ABC) = 83°

Find: m (∠ CEF)

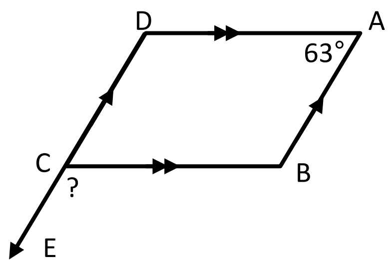


(4) In the opposite figure:

$\overrightarrow{AB}$ // $\overrightarrow{DC}$, $\overrightarrow{AD}$ // $\overrightarrow{BC}$ and

m (∠ BAD) = 63°

Find m (∠ BCE)

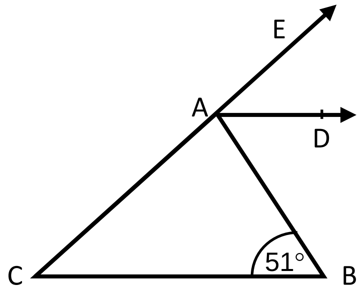


(5) In the opposite figure:

$\overrightarrow{AD} // \overrightarrow{CB}$, $\overrightarrow{AD}$ bisects ∠ BAE

and m (∠ B) = 51°

Find: m (∠ BAD) , m (∠ C)

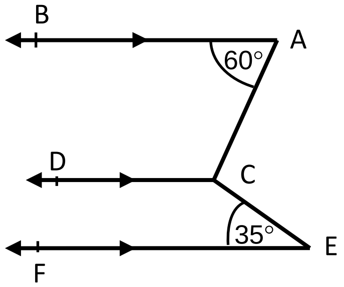


(6) In the opposite figure:

$\overrightarrow{AB} // \overrightarrow{CD}$, $\overrightarrow{AB} // \overrightarrow{EF}$

m (∠ A) = 60°, m (∠ E) = 35°

Find m (∠ ACE)



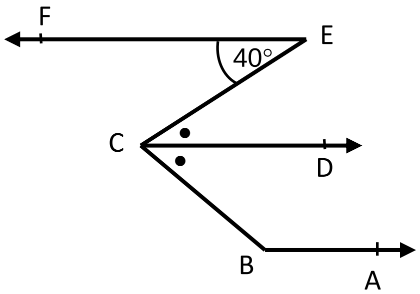
(7) In the opposite figure:

$\overrightarrow{BA} // \overrightarrow{CD}$, $\overrightarrow{CD} // \overrightarrow{EF}$

$\overrightarrow{CD}$ bisects ∠ BCE

and m (∠ CEF) = 40°

Find m (∠ B)



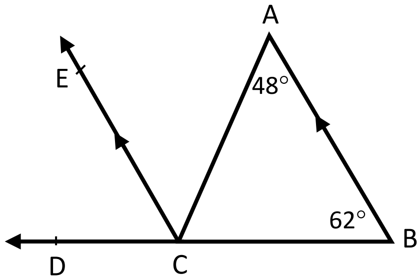
(8) In the opposite figure:

$\overrightarrow{BA} // \overrightarrow{CE}$, m (∠ A) = 48°

D ∈ $\overrightarrow{BC}$, m (∠ B) = 62°

Find: m (∠ ECD) , m (∠ ACE) ,

and m (∠ ACB)



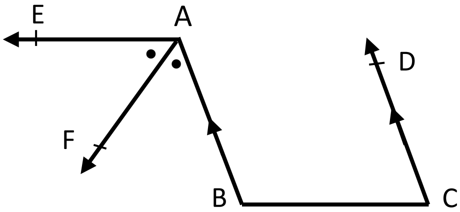
(9) In the opposite figure:

$\overrightarrow{CD} // \overrightarrow{BA}$, $\overrightarrow{CB} // \overrightarrow{AE}$

$\overrightarrow{AF}$ bisects ∠ BAE, and

m (∠ FAE) = 58°

Find: m (∠ C)



(10) In which of the following figures: $\overleftrightarrow{AB} // \overleftrightarrow{CD}$

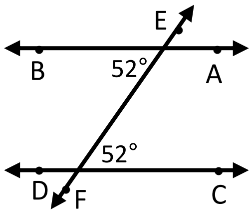


Figure (1)

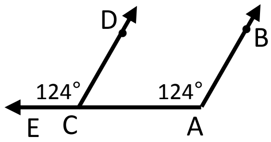


Figure (2)

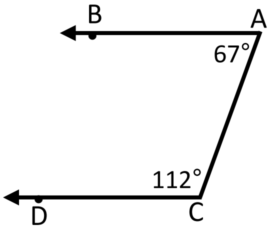


Figure (3)

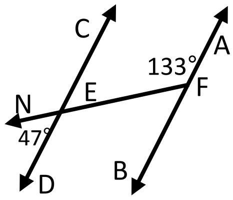


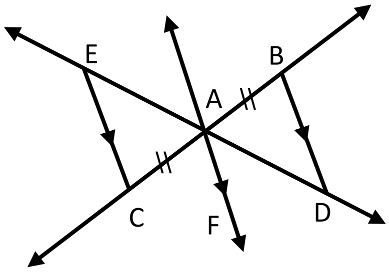
Figure (4)

(11) In the figure opposite:

$\overleftrightarrow{BD} // \overleftrightarrow{AF} // \overleftrightarrow{CE}$, AB = AC and

DE = 12 cm

Find the length of $\overline{AD}$

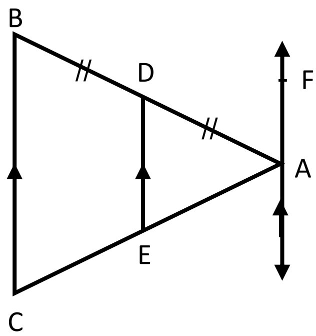


(12) In the figure opposite:

$\overleftrightarrow{AF} // \overleftrightarrow{DE} // \overleftrightarrow{BC}$, AD = BD

AD = 5 cm, AE = 4 cm, BC = 6 cm

Find the perimeter of Δ ABC



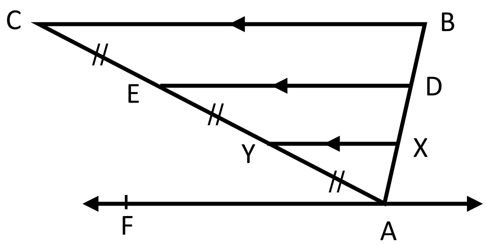
(13) In the figure opposite:

$\overleftrightarrow{AF} // \overleftrightarrow{XY} // \overleftrightarrow{DE} // \overleftrightarrow{BC}$ and

AY = YE = EC ,

AY = 3 cm , AX = 2 cm ,

the perimeter of Δ ABC = 23 cm find BC



Model Answer

Part (1)

Exercise (1)

(1) Choose:

1) obtuse   2) 0°   3) 60°   4) 100°

(2) 360 - (110 + 30 + 90) = 130°

(3) 180 - 80 = 100°

Exercise (2)

(1) Complete:

1) 180°   2) 90 - 36 = 54°   180 - 36 = 144°

3) supplementary   4) 360°

5) reflex angle

(2) 1) 270°   2) 180°   3) obtuse angle   4) 180°

(3) m (∠ AMC) = 180 - 90 = 90°

$\frac{90}{2}$ = 45°

m (∠ BMD) = m (∠ AMC) = 45°   → (V.O.A)

m (∠ AMD) = 180 - 45 = 135°

(4) ∵ $\overline{MC}$ bisect (∠ BMD)

∴ m (∠ CMB) = $\frac{82}{2}$ = 41°

∵ m (∠ CMB) + m (∠ BMA) = 41 + 139 = 180°

∴ $\overrightarrow{MC}$, $\overrightarrow{MA}$ are on the same straight line

Exercise (3)

(1) 1) 90° , zero 2) 90°
3) are supplementary 4) equal

(2)
1) 53° 2) acute 3) supplementary
4) 360° 5) 60°

(3) m (∠ CFD) = 360 - (120 + 80 + 90) = 70°

(4) m (∠ AMD) = m (∠ BMC) = 140° → (V.O.A)
∵ $\overline{ME}$ bisect (∠ AMD) = $\frac{140}{2} = 70°$

Exercise (4)

(1) 1) Included angle
2) The hypotenuse and a side of one triangle are congruent to the corresponding parts of the other.
3) The side drawn between their vertices
4) sides 5) EF , B
6) ΔΔ DEF , XYZ 7) NL , m (∠ n)

(2) 1) b 2) a 3) d 4) 2
5) b 6) c 7) 4

(3)
1) yes (A.S.A) 2) yes (S.S.S)
3) yes (S.A.S) 4) No
5) yes (A.S.A) 6) No
7) yes (R.H.S) 8) No
9) yes (S.A.S) 10) No
11) No 12) No

Part (2)

(1) Complete the following:

1) supplementary
2) supplementary
3) are parallel
4) perpendicular to the other
5) parallel
6) 1.5 cm
7) 3 cm

(2)

1) 38°
2) 73°
3) 180 - 112 = 68°
4) 39°
5) $\frac{110}{2} = 55°$
6) 72°

(3) $\because \overline{BA} // \overline{CD}$, $\overline{BC}$ transversal

$\therefore$ m (∠ DCE) = m (∠ ABC) = 83° corresponding angles

$\because \overline{CD} // \overline{EF}$, $\overline{CE}$ transversal

$\therefore$ m (∠ FEC) = m (∠ DCE) = 83° Alternates angles

(4) $\because \overline{AB} // \overline{CD}$, $\overline{AD}$ transversal

$\therefore$ m (∠ ADC) = 180 - 63 = 117° interior angles

$\because \overline{AD} // \overline{CB}$, $\overline{CD}$ transversal

$\therefore$ m (∠ BCE) = m (∠ ADC) = 117° Corresponding angles

(5) $\because \overline{AD} // \overline{CB}$, $\overline{AB}$ transversal

$\therefore$ m (∠ DAB) = m (∠ B) = 51° Alternate angles

$\because \overline{AD}$ bisect (∠ BAE)

$\therefore$ m (∠ EAD) = 51°

$\therefore$ m (∠ C) = m (∠ EAD) = 51° Corresponding angles

(6) ∵ $\overline{BA}$ // $\overline{CD}$, $\overline{AC}$ transversal

∴ m (∠ ACD) = 180 - 60 = 120° Interior angles

∵ $\overline{CD}$ // $\overline{EF}$, $\overline{CE}$ transversal

∴ m (∠ DCE) = 180 - 35 = 145° Interior angles

∴ m (∠ ACE) = 360 - (145 + 120) = 95°

(7) ∵ $\overline{EF}$ // $\overline{CD}$, $\overline{CE}$ transversal

∴ m (∠ E) = m (∠ ECD) = 40° Alternate angles

∵ $\overline{CD}$ bisect (∠ ECB)

∴ m (∠ DEB) = 40°

∵ $\overline{CD}$ // $\overline{BA}$, $\overline{CB}$ transversal

∴ m (∠ B) = 180 - 40 = 140°

(8) ∵ $\overline{AB}$ // $\overline{CE}$, $\overline{CB}$ is transversal

∴ m (∠ B) = m (∠ ECD) = 62° Corresponding angles

∴ m (∠ ECA) = m (∠ A) = 48° Alternate angles

∵ m (∠ A) + m (∠ B) + m (∠ C) = 180°

Sum of interior angles of triangle

∴ m (∠ C) = 180 - (62 + 48) = 70°

(9) ∵ $\overline{EA}$ // $\overline{BC}$, $\overline{AB}$ is transversal

∴ m (∠ B) = m (∠ A) = 58 × 2 = 116° Alternate angles

∵ $\overline{AB}$ // $\overline{CD}$, $\overline{BC}$ is transversal

∴ m (∠ C) = 180 - 116 = 64° (interior angles)

(10) $\because$ Figure (1 , 2 , 4)

(11) $\because$ $\overline{AF}$ // $\overline{BD}$ // $\overline{CE}$ and

AB = AC

$\therefore$ AD = AE = $\frac{12}{2}$ = 6 cm

(12) $\because$ $\overline{AF}$ // $\overline{DE}$ // $\overline{BC}$ and AD = DB

$\therefore$ AE = EC = 4 cm

$\therefore$ p. of Δ ABC = 5 + 5 + 6 + 4 + 4 = 24 cm

(13) $\because$ $\overline{YX}$ // $\overline{ED}$ // $\overline{CB}$,

AY = YE = EC = 3 cm

$\therefore$ AX = XD = DB = 2 cm

$\because$ p. of Δ ABC = 23 cm

$\therefore$ BC = 23 - [2 + 2 + 2 + 3 + 3 + 3] = 8 cm

1st prep Geometry



Questions :

A) Complete:

1) The sum of measure of accumalative angles = ...

2) If m ($\angle$ X) = 80° , m ($\angle$ Y) = 100° then $\angle$ X and $\angle$ Y are .... angles.

3) If Δ XYZ $\equiv$ Δ LMN , m ($\angle$ X) = 60° , m ($\angle$ N) = 70° , m ($\angle$ Y) = ...

4) If a straight line intersects two parallel straight lines then each two interior angles are ....

5) Two triangles are congruent if two sides and ....

6) The two adjacent angles in which the two outer sides are on the same straight line are ....

7) Rectangle its length 4 cm and width 3 cm, then the area of the square drawn on its diagonal = ...

8) The straight line that perpendicular to line segment from its middle called ....

9) If two straight lines intersected then every two vertically opposite angle are ....

10) If $\overrightarrow{YL}$ bisecting $\angle$ XYZ , m ($\angle$ XYL) = 50° then m ($\angle$ XYZ) = ...

11) If a straight line intersect two straight lines and two alternate angles are equal in measure, then the two lines are ....

12) The axis of symetry of line segment is the straight line ....





13) The supplement of angle its measure 70° is the angle its measure ....

14) If the polygon ABCD ≡ polygon XYZL , then the vertix Z congruent to vertix ....

15) If $\overrightarrow{BA} \perp \overrightarrow{BC}$, $\overrightarrow{BD}$ bisects ∠ ABC then m (∠ ABD) = ...

16) The measure of two complementary angles equal ....

17) Two triangles are congruent if two angles and ....

18) If a straight line intersects two parallel straight lines then each two alternate angles are ....

19) If : $\overline{LM} \equiv \overline{CD}$ then LM – CD = ...

20) If : $\overline{XY} \equiv \overline{AB}$, XY = 3cm then AB = ... cm.

21) In the right angled triangle, the area of square drawn on its hypotenuse = ...

22) Two right-angled triangles are congruent if ....

23) The two adjacent angles formed by a straight line and a ray with a starting point on this straight line are ....

24) If : Δ ABC ≡ Δ XYZ and if m (∠ X) + m (∠ Y) = 120°

then m (∠ C) = ...

25) If the straight angle bisected then the result angles will be ....

26) The angle is ....

27) The two perpendicular straight lines to a third line are ....

28) The outer sides of the complementary adjacent angles are ....

29) The two bisectors of the two supplementaryadjacent angles are ....

30) The outer sides of the two supplementary adjacent angles are ....

31) If m (∠ A) = 70° , then m (reflex ∠ A) = ...

32) The supplements of the acute angle is ....

33) If ∠ A ≡ ∠ B , m (∠ A) = 50° then

m (∠ A) + m (∠ B) = ...

34) The measure of the angle is 70° then the measure of the complementary angle is ....

35) If the polygon ABCD ≡ the polygon ABXY then the common side is ....

(B) By using ruler and protractor and compasses:

1) Draw angle its measure 45° then bisect it. "Don't delete the arcs"

2) Draw Δ ABC in which AB = AC = 5 cm , BC = 6 cm then bisect (∠ C).

3) Draw angle its measure 80° then bisect it.

4) Draw angle its vertix A and its measure 120° then bisect it to two equal halves.

5) Draw Δ ABC in which AB = 6 cm , m (∠ A) = 50° , m (∠ B) = 70° then bisect (∠ A) , (∠ B) with two bisects intersects at point M.

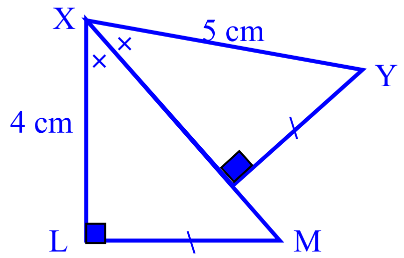
Find m (∠ AMB)

(C) In the next figures:

1) Is Δ XYZ ≡ Δ XML?

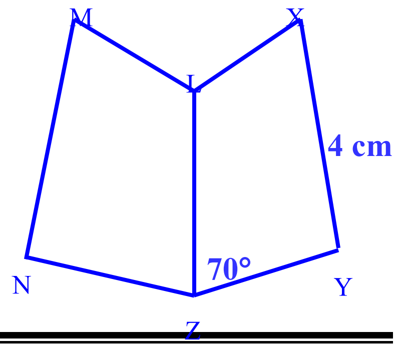
2) If the triangles are congruent, state the case of congruence.

3) Find length of $\overline{ZM}$



(1) The polygon XYZL ≡ the polygon MNZL

the area XYZL= 100 cm^2



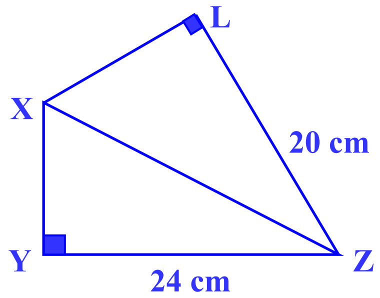
Find: 1) m (∠ XYN) = ...

2) permeter of figure XYZNML = ...

3) Area of figure XYZNML = ...

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(2)

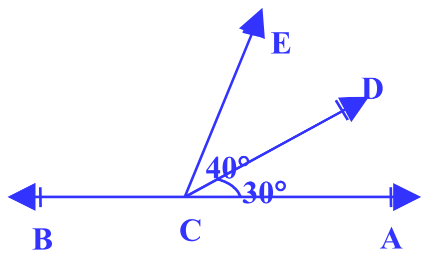


1) Find the area of square drawn on XZ = ...

2) Find the area of square drawn on $\overline{LX}$ = ...

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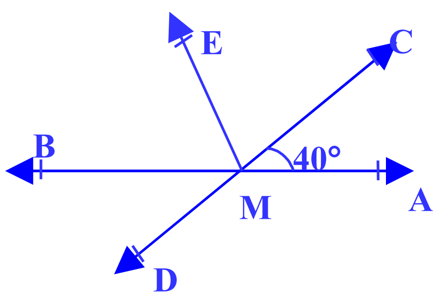
(3)



Find: m (∠ ECB) = ...°

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(4)



$\overleftrightarrow{AB} \cap \overleftrightarrow{CD}$, $\overrightarrow{ME}$ bisects ∠ CMB ,

m (∠ AMC) = 40°

Find: m (∠ BMD) = ...°

m (∠ EMD) = ...°

(5)



If : Δ ABC ≡ Δ XYZ , find :

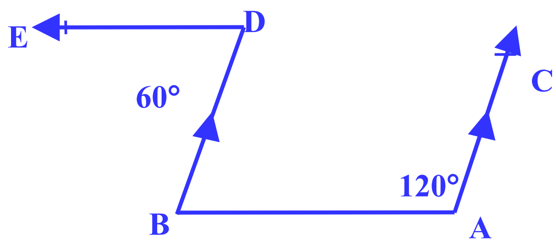
m (∠ Z) and the length of $\overline{AC}$

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(6) $\overrightarrow{AC}$ // $\overline{BD}$, m (∠ A) = 120° ,
m (∠ D) = 60°

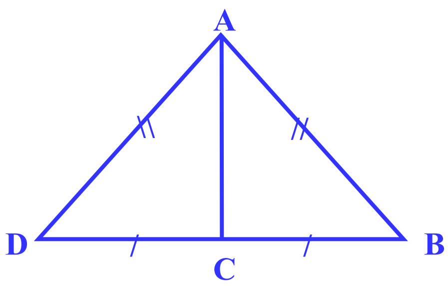
Find: 1) m (∠ B)

2) $\overrightarrow{DE}$ // $\overline{AB}$, why?



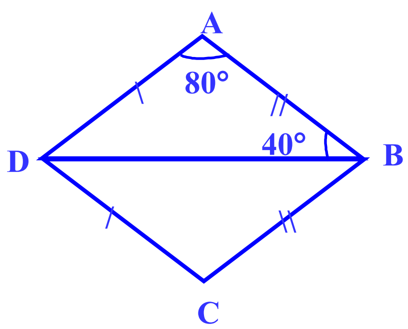
(7)

Are the two triangle ABC , ACD congruence, state the condition of congruence



(8)

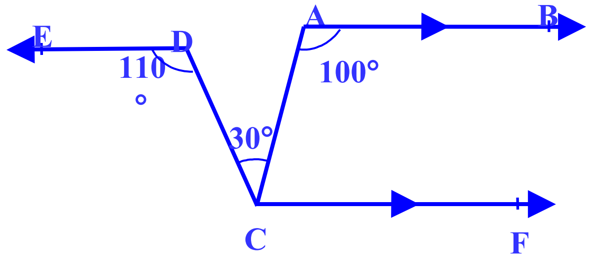
Find : m (∠ ADC)



(9)

Find: 1) m (∠ DCF)

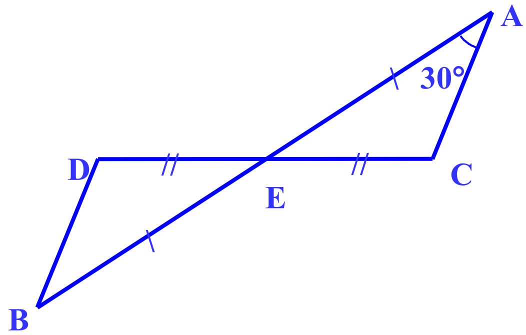
2) Are DE // CF , why?



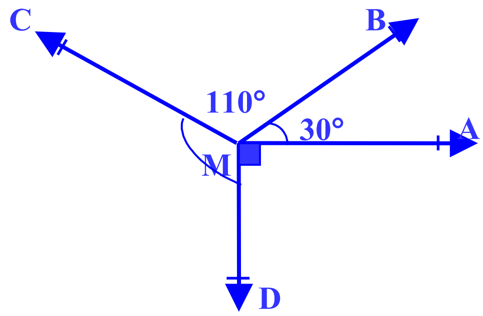
(10) Are Δ ACE ≡ Δ BDE

* Find : m (∠ B)

Are $\overline{AC}$ // $\overline{DB}$



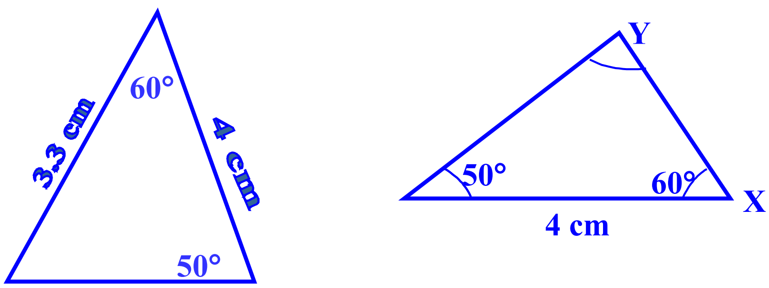
(11) Find m (∠ CMD) = 130°



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(12) Study the opposite two figures: then

Find the value of X and Y



(13) $\overleftrightarrow{AC}$ bisects ∠ DAB

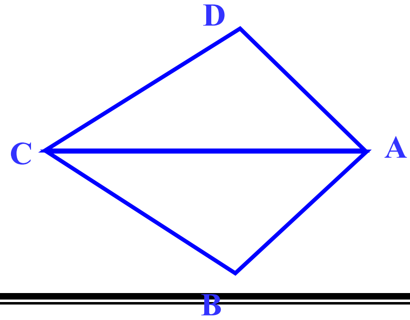
m (∠ B) = 110° , AB = 5cm

DC = 8 cm , **find**

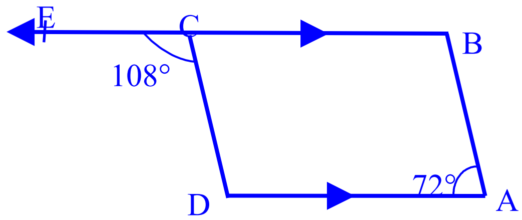
1) m (∠ D)

2) Length of $\overline{BC}$

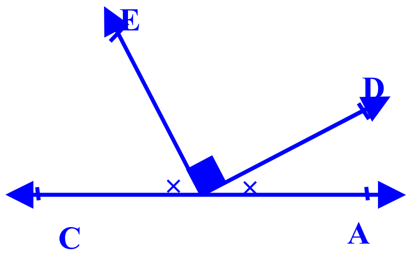
3) Length $\overline{AD}$



(14) Prove that $\overline{AB}$ // $\overline{CD}$



(15) m (∠ EBC)



The Answers

(1) Complete:

1) 360° 2) supplementary 3) 50°



4) suplementary angle

5) included angle in one of them are congruent to its corresponding elements in the other triangle.

6) suplementary 7) 25 cm^2 8) axis of symetry

9) equal in measure 10) 100° 11) parallel

12) perpendicular to it from its middle

13) 110° 14) C 15) 45°

16) 90°

17) Side drawn between them in one of them congruent to the corresponding elements in the other traingle.

18) equal in measure 19) zero 20) 3 cm

21) The sum o area of the two squares drawn on the sides of right angle.

22) hypotenuse and one side of right angle are congruent to its corresponding elements in the other traingle.

23) supplementary 24) 60° 25) right angles

26) union of two rays has same starting point

27) parallel 28) perpendicular 29) perpendicular

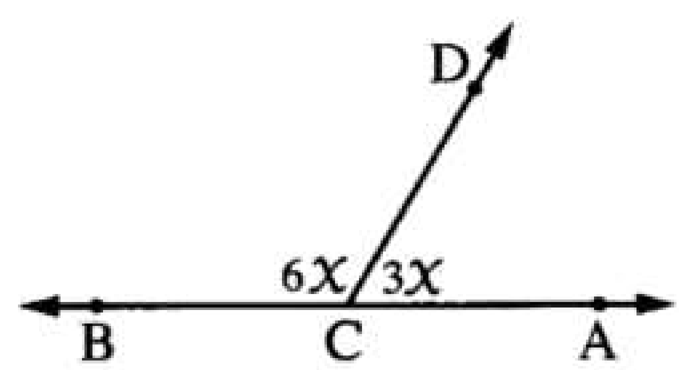
30) On the same straight line (collinear) 31) 290°

32) obtuse angle 33) 100° 34) 20°

35) $\overline{AB}$

[A] : Choose The Correct Answer : -

1	The measure of the right angle = ...° (a) 90 (b) 180 (c) 270 (d) 360	A
2	The type of the angle of measure 179° 60̀ is .... angle. (a) acute (b) obtuse (c) straight (d) right	C
3	The angle whose measure is 210° is .... angle. (a) an acute (b) a right (c) an obtuse (d) a reflex	D
4	If m (∠ B) = 120° , then m (reflex ∠ B) = ...° (a) 60 (b) 120 (c) 240 (d) 180	C
5	The angle of measure 70° complements an angle of measure ....° (a) 90 (b) 20 (c) 180 (d) 110	B
6	If ∠ A complements ∠ B , m (∠ A) = m (∠ B) , then m (∠ A) = ...° (a) 90 (b) 180 (c) 45 (d) 60	C
7	The acute angle complements .... angle. (a) an acute (b) an obtuse (c) a right (d) a reflex	A
8	The supplementary angle of the angle of measure 70° is .... (a) 30° (b) 110° (c) 20° (d) 290°	B
9	The acute angle supplements .... angle. (a) an acute (b) an obtuse (c) a right (d) a reflex	B
10	If one of two supplementary angles is right. then the other is .... angle. (a) an acute (b) a right (c) an obtuse (d) a straight	B
11	If ∠ A supplements ∠ B and ∠ A ≡ ∠ B , then m (∠ A) = ...° (a) 180 (b) 90 (c) 360 (d) 45	B
12	The sum of the measures of two adjacent angles formed by a straight line and a ray with a starting point on this straight line is .... (a) 90° (b) 180° (c) 270° (d) 360°	B
13	If ∠ A and ∠ B are supplementary angles and m (∠ A) = 2 m (∠ B) , then m (∠ A) = ...° (a) 90 (b) 60 (c) 180 (d) 120	D

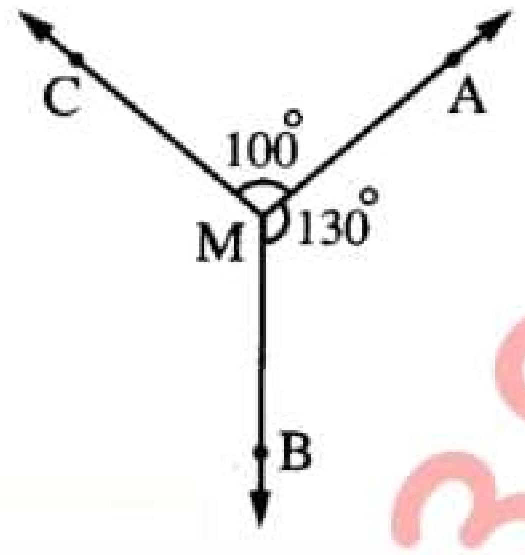
14	If the ratio between two adjacent supplementary angles is 2 : 3 , then the measure of the smallest angle is ....° (a) 108 (b) 36 (c) 72 (d) 125	C
15	The sum of measures of the accumulative angles at a point equals .... (a) 90° (b) 180° (c) 630° (d) 360°	D
16	If AB = XY , then $\overline{AB}$ .... $\overline{XY}$ (a) > (b) ≡ (c) < (d) ≠	B
17	If Δ XYZ ≡ Δ LMN , then m (∠ Y) = m (∠ ....) (a) L (b) M (c) N (d) X	B
18	If $\overline{AB} \equiv \overline{XY}$, then AB – XY = ... (a) AB (b) XY (c) 1 (d) zero	D
19	If Δ ABC ≡ Δ XYZ , then BC = ... (a) YZ (b) XZ (c) XY (d) AC	A
20	If Δ ABC ≡ Δ XYZ and m (∠ A) + m (∠ X) = 100° , then m (∠ A) = ...° (a) 100 (b) 80 (c) 40 (d) 50	D
21	If Δ ABC ≡ Δ XYZ , m (∠ A) + m (∠ C) = 110° , then m (∠ Y) = ...° (a) 50 (b) 70 (c) 80 (d) 100	B
22	If two straight lines are parallel to a third straight line , then they are .... (a) perpendicular. (b) intersecting. (c) parallel. (d) congruent.	C
23	The straight line that is perpendicular to one of two parallel lines is .... to the other. (a) parallel (b) congruent (c) perpendicular (d) equal	C
24	If $\overleftrightarrow{AB} // \overleftrightarrow{XY}$, then $\overleftrightarrow{AB} \cap \overleftrightarrow{XY}$ = ... (a) {B} (b) $\overline{AX}$ (c) ∅ (d) {Y}	C
25	If $L_1 // L_2$ and $L_1 \perp L_3$, then .... (a) $L_1 \perp L_2$ (b) $L_1 // L_3$ (c) $L_2 // L_3$ (d) $L_2 \perp L_3$	D
26	**In the opposite figure :** $\overleftrightarrow{AB} \cap \overrightarrow{CD}$ = {C} , then x = ...° (a) 180 (b) 30 (c) 20 (d) 120 	C

27 In the opposite figure :

m (∠ CMB) = ... °

(a) 230 (b) 100

(c) 130 (d) 30



C

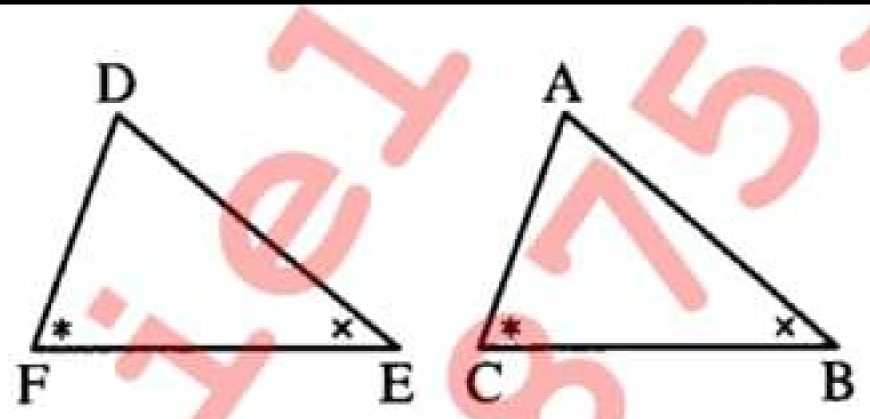
28 In the opposite figure :

The necessary condition to make

Δ ABC ≡ Δ DEF is ....

(a) AB = DE (b) AC = DF

(c) BC = EF (d) m (∠ A) = m (∠ D)

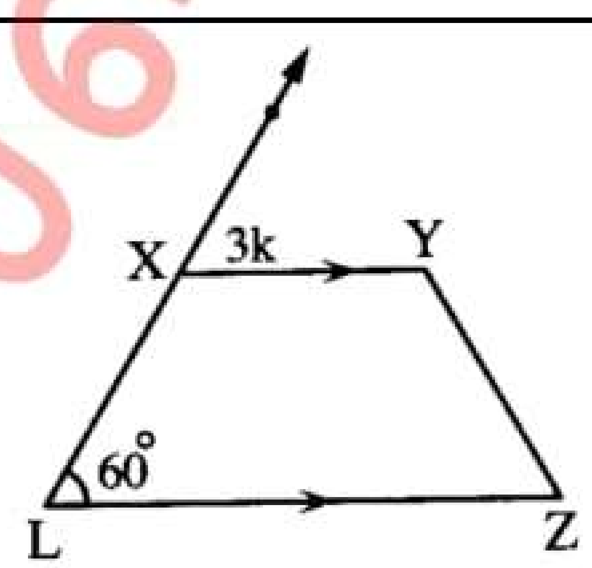


C

29 In the opposite figure : If $\overline{XY}$ // $\overline{LZ}$, then k = ... °

(a) 90 (b) 60

(c) 30 (d) 20

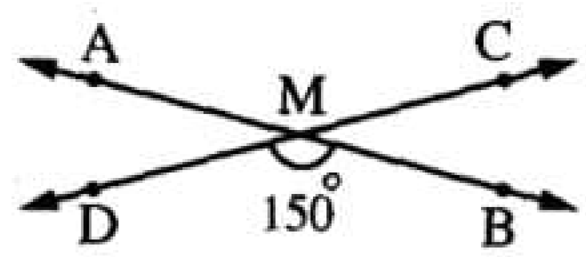


D

30 In the opposite figure :

$\overleftrightarrow{AB} \cap \overleftrightarrow{DC} = \{M\}$, m (∠ AMC) = ... °

(a) 30 (b) 210 (c) 150 (d) 60



C

31 The measure of the right angle = ... °

(a) 90 (b) 180 (c) 270 (d) 360

A

32 The measure of the straight angle = ... °

(a) 90 (b) 180 (c) 360 (d) zero

B

33 The type of the angle of measure $179° 60'$ is .... angle.

(a) acute (b) obtuse (c) straight (d) right

C

34 The angle whose measure is 108° is .... angle.

(a) an acute (b) a right (c) an obtuse (d) a straight

C

35 The angle whose measure is 210° is .... angle.

(a) an acute (b) a right (c) an obtuse (d) a reflex

D

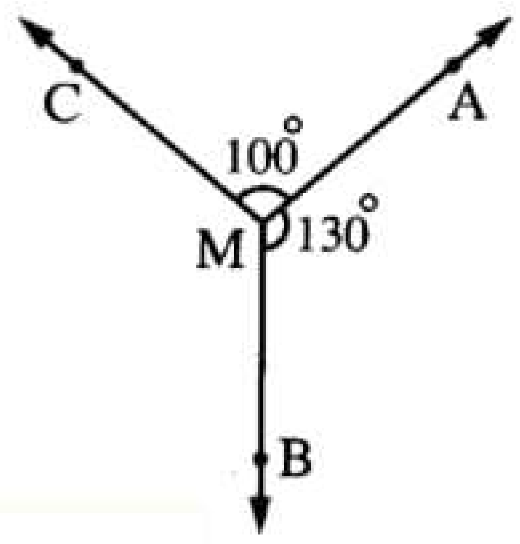
36 If m (∠ B) = 120° , then m (reflex ∠ B) = ... °

(a) 60 (b) 120 (c) 240 (d) 180

C

37	$\overline{AB}$ .... $\overrightarrow{AB}$ (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$	C
38	If m (∠ A) + m (∠ B) = 90° , then ∠ A , ∠ B are .... angles. (a) complementary (b) supplementary (c) equal (d) adjacent	A
39	The angle of measure 70° complements an angle of measure ....° (a) 90 (b) 20 (c) 180 (d) 110	B
40	If ∠ A complements ∠ B , m (∠ A) = m (∠ B) , then m (∠ A) = ...° (a) 90 (b) 180 (c) 45 (d) 60	C
41	The acute angle complements .... angle. (a) an acute (b) an obtuse (c) a right (d) a reflex	A
42	If the two adjacent angles are complementary , then their outer sides are .... (a) perpendicular. (b) coincident. (c) on the same straight line. (d) skew.	A
43	The two angles 35° , 55° are .... (a) complementary. (b) supplementary. (c) adjacent. (d) reflex.	A
44	If m (∠ X) = 2 m (∠ Y) , ∠ X and ∠ Y are two complementary angles , then m (∠ Y) = ... (a) 90° (b) 45° (c) 30° (d) 15°	C
45	The supplementary angle of the angle of measure 70° is .... (a) 30° (b) 110° (c) 20° (d) 290°	B
46	The acute angle supplements .... angle. (a) an acute (b) an obtuse (c) a right (d) a reflex	B
47	If one of two supplementary angles is right. then the other is .... angle. (a) an acute (b) a right (c) an obtuse (d) a straight	B
48	The obtuse angle supplements .... angle. (a) an acute (b) an obtuse (c) a right (d) a reflex	A

49	If ∠ A supplements ∠ B and ∠ A ≡ ∠ B , then m (∠ A) = ...° (a) 180 (b) 90 (c) 360 (d) 45	B
50	The sum of the measures of two adjacent angles formed by a straight line and a ray with a starting point on this straight line is .... (a) 90° (b) 180° (c) 270° (d) 360°	B
51	If ∠ A and ∠ B are supplementary angles and m (∠ A) = 2 m (∠ B) , then m (∠ A) = ...° (a) 90 (b) 60 (c) 180 (d) 120	D
52	If the ratio between two adjacent supplementary angles is 2 : 3 , then the measure of the smallest angle is ....° (a) 108 (b) 36 (c) 72 (d) 125	C
53	If ∠ A ≡ ∠ B , ∠ A and ∠ B are two supplementary angles , then $\frac{1}{3}$ m (∠ A) = ... (a) 15° (b) 30° (c) 40° (d) 60°	B
54	The sum of measures of the accumulative angles at a point equals .... (a) 90° (b) 180° (c) 630° (d) 360°	D
55	If AB = XY , then $\overline{AB}$ .... $\overline{XY}$ (a) > (b) ≡ (c) < (d) ≠	B
56	In Δ ABC , if m (∠ A) = 30° , m (∠ B) = 90° , then m (∠ C) = ... (a) 60° (b) 30° (c) 45° (d) 90°	A
57	If Δ XYZ ≡ Δ LMN , then m (∠ Y) = m (∠ ....) (a) L (b) M (c) N (d) X	B
58	If Δ ABC ≡ Δ XYZ and m (∠ C) = 50° , then m (∠ ....) = 50° (a) X (b) Y (c) Z (d) M	C
59	If $\overline{AB}$ ≡ $\overline{XY}$, then AB – XY = ... (a) AB (b) XY (c) 1 (d) zero	D

60	If $\Delta ABC \equiv \Delta XYZ$, then BC = …………… (a) YZ (b) XZ (c) XY (d) AC	A
61	If $\Delta ABC \equiv \Delta MNO$, m ($\angle$ M) = 40° and m ($\angle$ C) = 60° , then m ($\angle$ B) = ……………° (a) 40 (b) 80 (c) 60 (d) 100	B
62	If $\Delta ABC \equiv \Delta XYZ$ and m ($\angle$ A) + m ($\angle$ X) = 100°, then m ($\angle$ A) = ……………° (a) 100 (b) 80 (c) 40 (d) 50	D
63	If $\Delta ABC \equiv \Delta XYZ$, m ($\angle$ A) + m ($\angle$ C) = 110° , then m ($\angle$ Y) = ……………° (a) 50 (b) 70 (c) 80 (d) 100	B
64	If two straight lines are parallel to a third straight line , then they are …………… (a) perpendicular. (b) intersecting. (c) parallel. (d) congruent.	C
65	If parallel straight lines divide a straight line into segments of equal lengths , then they divide any other straight line into segments of …………… lengths. (a) parallel (b) not equal (c) equal (d) perpendicular	C
66	The straight line that is perpendicular to one of two parallel lines is …………… to the other. (a) parallel (b) congruent (c) perpendicular (d) equal	C
67	If $\overleftrightarrow{AB}$ // $\overleftrightarrow{XY}$, then $\overleftrightarrow{AB} \cap \overleftrightarrow{XY}$ = …………… (a) {B} (b) $\overline{AX}$ (c) $\varnothing$ (d) {Y}	C
68	If $L_1 // L_2$ and $L_1 \perp L_3$, then …………… (a) $L_1 \perp L_2$ (b) $L_1 // L_3$ (c) $L_2 // L_3$ (d) $L_2 \perp L_3$	D
69	**In the opposite figure :** m ($\angle$ CMB) = ……………° (a) 230 (b) 100 (c) 130 (d) 30 	C

70

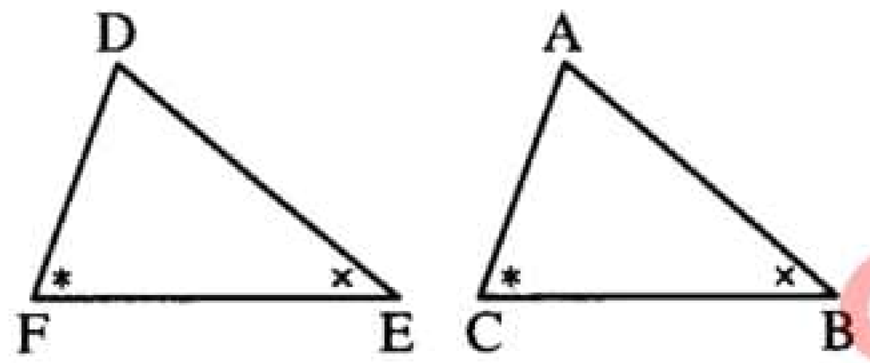
In the opposite figure :

The necessary condition to make

$\Delta ABC \equiv \Delta DEF$ is ....

(a) AB = DE (b) AC = DF

(c) BC = EF (d) m (∠ A) = m (∠ D)



C

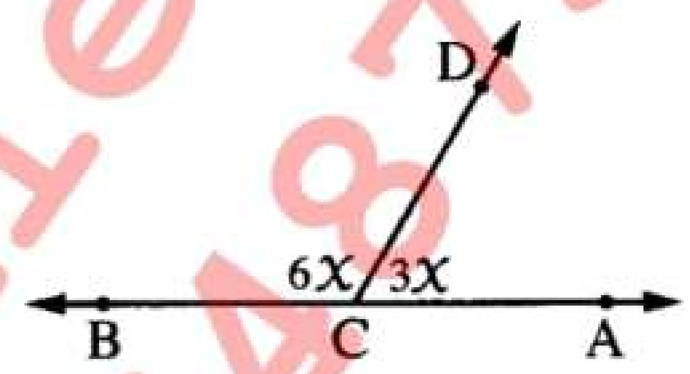
71

In the opposite figure :

$\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \{C\}$, then $x =$ ....°

(a) 180 (b) 30

(c) 20 (d) 120



C

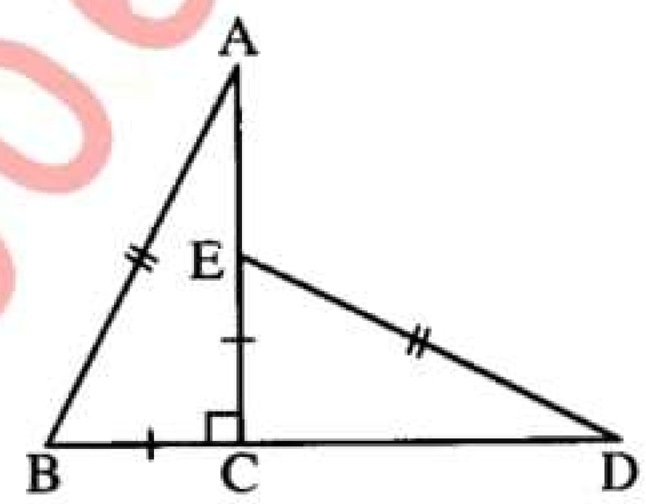
72

In the opposite figure :

If AB = DE , BC = EC , $\overline{AC} \perp \overline{BD}$, then m (∠ A) = ...

(a) m (∠ B) (b) m (∠ D)

(c) m (∠ DEC) (d) m (∠ ACD)



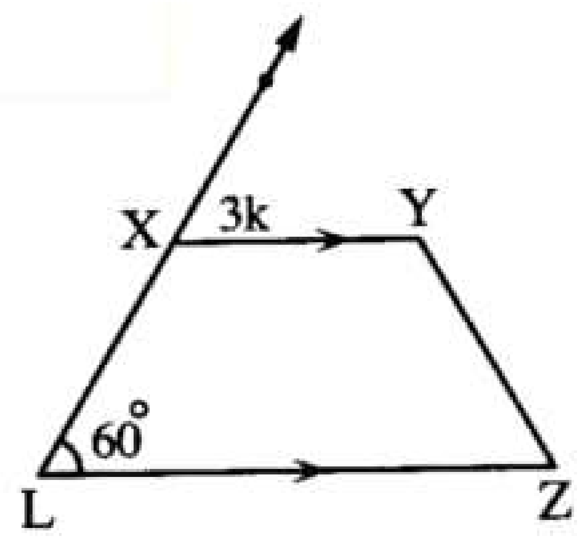
B

73

In the opposite figure : If $\overline{XY}$ // $\overline{LZ}$, then k = ...°

(a) 90 (b) 60

(c) 30 (d) 20



D

74

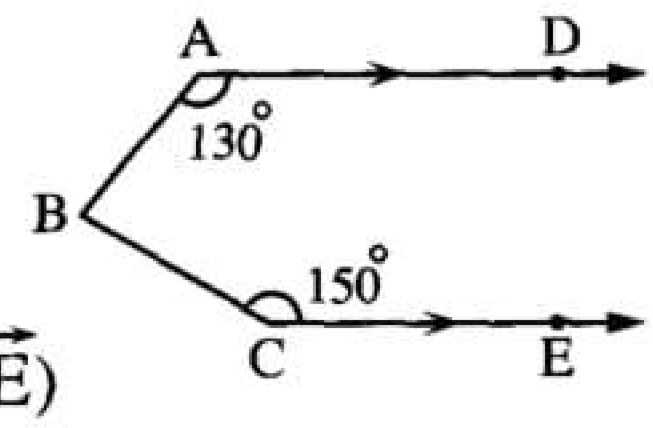
In the opposite figure :

$\overrightarrow{AD}$ // $\overrightarrow{CE}$

, m (∠ B) = ...°

(Hint : Draw a line passing through B and parallel to $\overrightarrow{AD}$ and $\overrightarrow{CE}$)

(a) 70 (b) 80 (c) 90 (d) 100



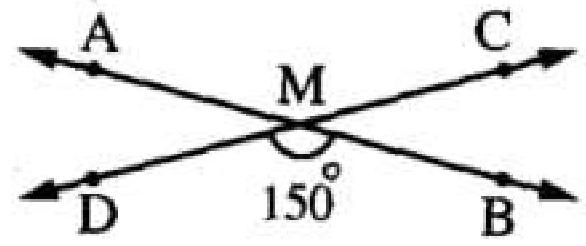
B

75

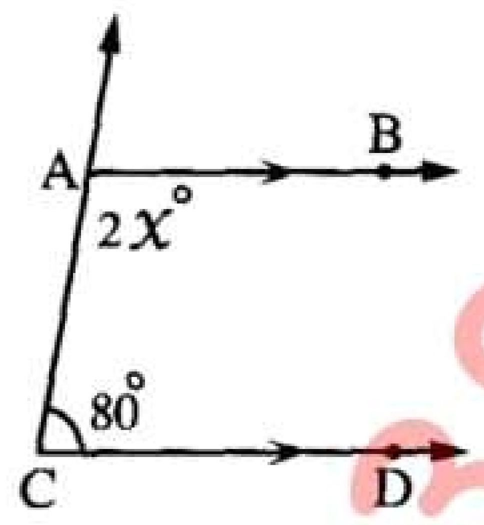
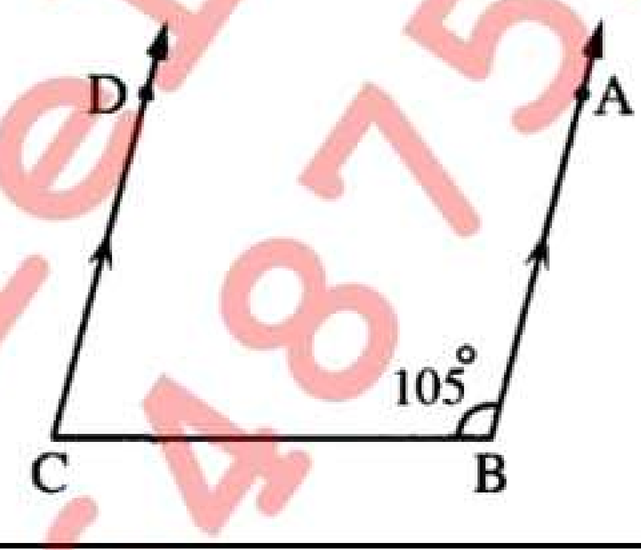
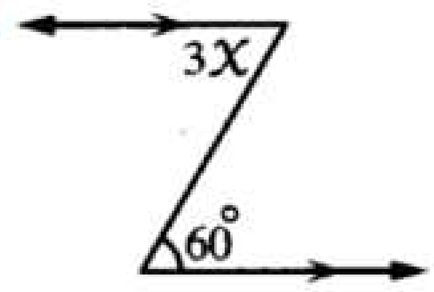
In the opposite figure :

$\overleftrightarrow{AB} \cap \overleftrightarrow{DC} = \{M\}$, m (∠ AMC) = ...°

(a) 30 (b) 210 (c) 150 (d) 60



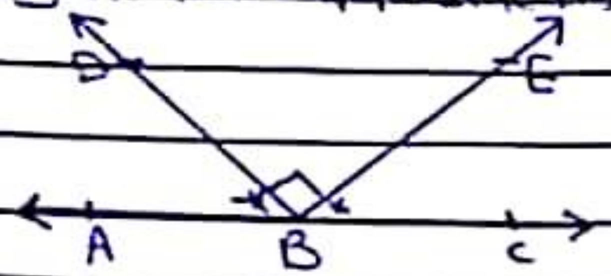
C

76	**In the opposite figure :** $x =$ .... ° (a) 40 (b) 80 (c) 50 (d) 100 	C
77	**In the opposite figure :** m (∠ C) = ... (a) 105° (b) 75° (c) 45° (d) 90° 	B
78	**In the opposite figure :** $x =$ .... ° (a) 20 (b) 30 (c) 40 (d) 120 	A

Final revision in Geometry

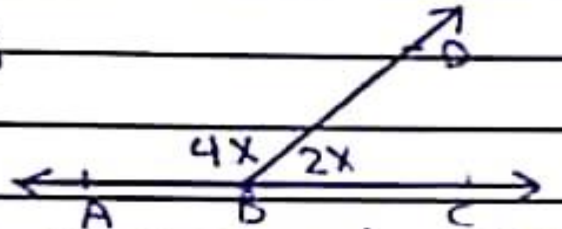
Prep (1)

[1] in the opposite figure



m(EBC) = $\frac{180 - 90}{2}$
= 45°

[2]



find the value of X

Sol

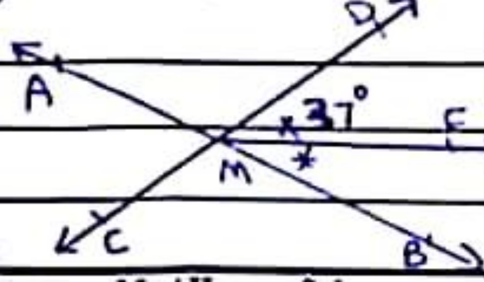
m(ABC) = 180 straight angle

2X + 4X = 180

6X = 180 (÷6)

X = 30°

[3] in the opposite figure



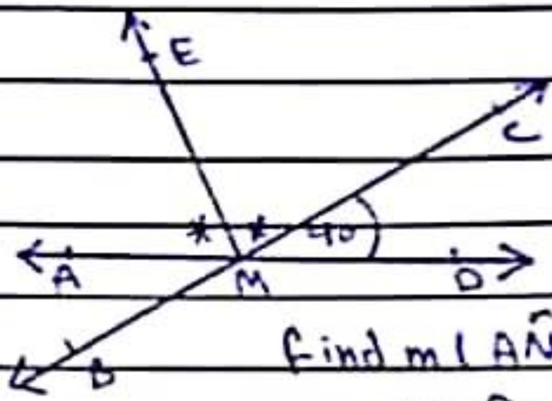
find m(AMC)

m(AMD)

Sol m(AMC) = m(DMB)
= 37° + 37° = 74°
(V.O.A)

m(AMD) = 180° − 74° = 106°

[4] in the opposite figure



find m(AMB)

m(AME)

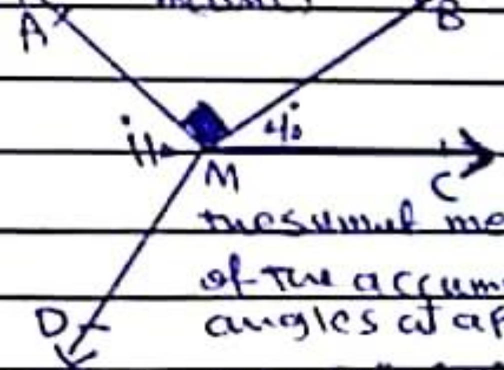
m(BMD)

Sol m(AMB) = m(CMD) = 40°
(V.O.A)

m(AME) = $\frac{180° - 40°}{2}$ = 70°

m(BMD) = m(AMC) = 70° + 70°
= 140°
V.O.A

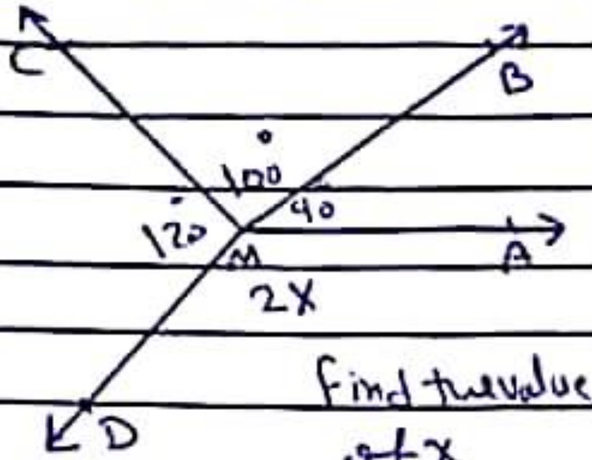
[5] Find m(AMC)



the sum of measures of the accumulative angles at a point = 360

m(DMC) = 360 − (90 + 40 + 110)
= 120

6 in the opposite figure



find the value of x

Sol the sum of measure of the accumulative angles at a point = 360

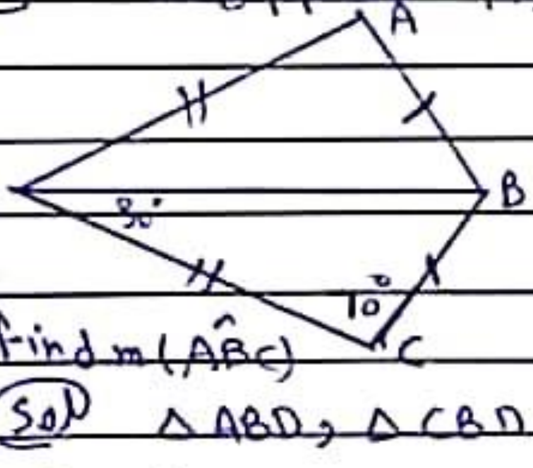
$m(\hat{AMD}) = 360 - (40° + 100° + 120°)$

$= 100°$

$2x = 100$ (÷2)

$x = 50°$

7 in the opposite figure



find $m(\hat{ABC})$

Sol $\triangle ABD$, $\triangle CBD$

1. $DA = DC$
2. $BA = BC$
3. $\overline{DB}$ is a common side

$\triangle ABD \equiv \triangle CBD$

and consequently

$m(\hat{A}) = m(\hat{C}) = 70°$

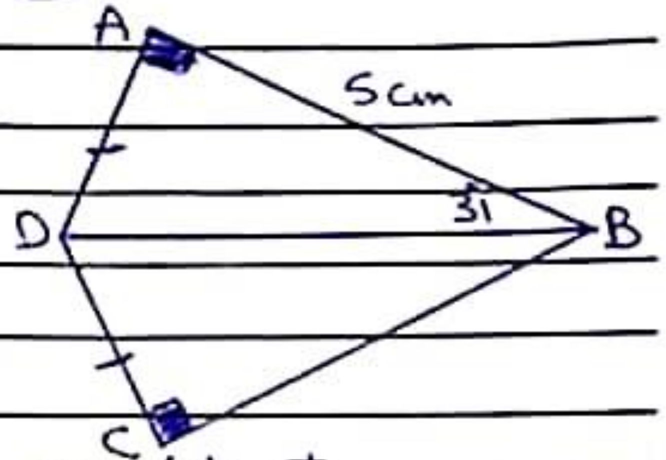
$m(\hat{ADB}) = m(\hat{CDB}) = 30°$

$m(\hat{ABD}) = m(\hat{CBD})$

$= 180 - (70° + 30°) = 80°$

$m(\hat{ABC}) = 80° + 80° = 160°$

8 in the opposite figure



prove that

1. $ABD \equiv \triangle CBD$
2. find $m(\hat{BDC})$
3. length of $\overline{BC}$

Sol $\triangle ABD$, $\triangle CBD$

1. $m(\hat{A}) = m(\hat{C}) = 90°$
2. $DA = DC$
3. $\overline{DB}$ is a common side

$\triangle ABD \equiv \triangle CBD$

and consequently

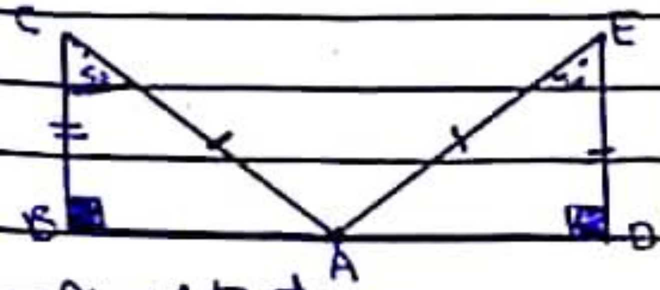
$m(\hat{DBC}) = m(\hat{DBA}) = 31°$

$m(\hat{BDC}) = 180 - (31° + 90°)$

$= 59°$

$BC = BA = 5$ cm

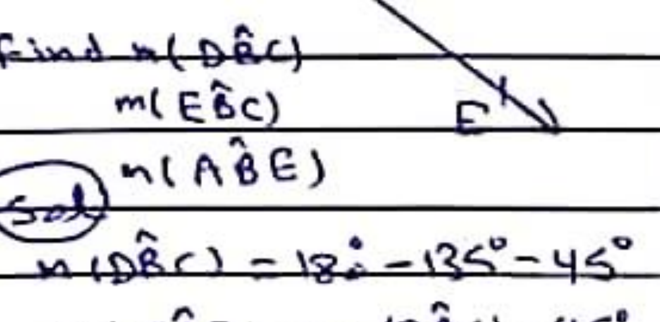
12 in The opposite figure



Prove that
$\Delta CBA \equiv \Delta EDA$
find $m(E\hat{A}D)$

Sol
$CA = EA$
$CB = ED$
$m(\hat{B}) = m(\hat{D}) = 90^\circ$
$(R.H.S)$
$\Delta CBA \equiv \Delta EDA$
and consequently
$m(\hat{E}) = m(\hat{C}) = 50^\circ$
$m(E\hat{A}D) = 180^\circ - (50^\circ + 90^\circ) = 40^\circ$

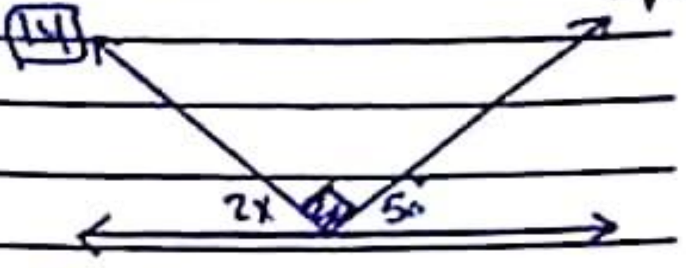
13 In the opposite figure



find $m(D\hat{B}C)$
$m(E\hat{B}C)$
$m(A\hat{B}E)$

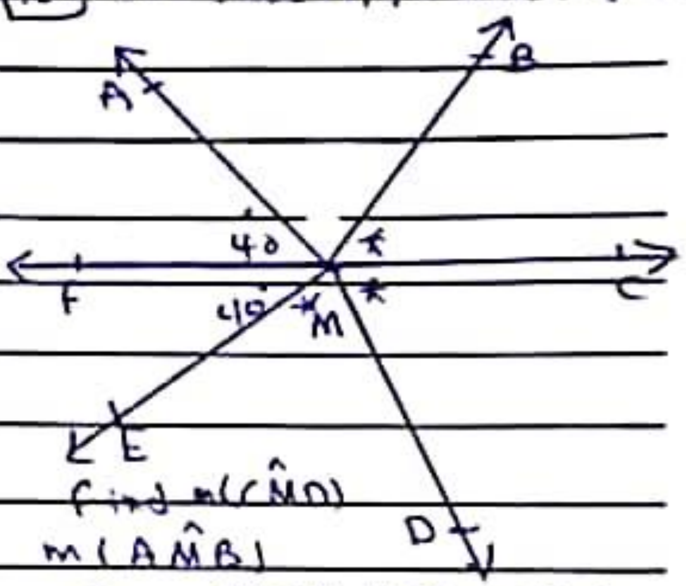
Sol
$m(D\hat{B}C) = 180^\circ - 135^\circ = 45^\circ$
$m(C\hat{B}E) = m(D\hat{B}C) = 45^\circ$
$m(A\hat{B}E) = 360^\circ - (135^\circ + 45^\circ + 45^\circ) = 135^\circ$

14



Sol find x
$2x = 180 - (90^\circ + 50^\circ) = 40$
$2x = 40 \quad (\div 2)$
$x = \frac{40}{2} = 20^\circ$

15 in The opposite figure

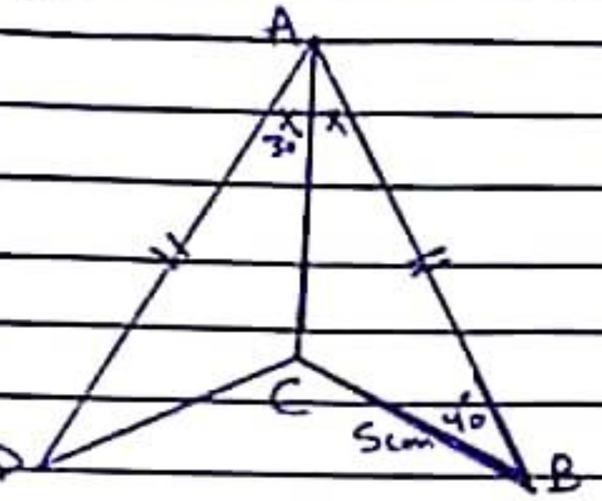


find $m(C\hat{M}D)$
$m(A\hat{M}B)$
are A, M, D on the same straight line

Sol $m(C\hat{M}D) = \frac{180 - 40}{2} = 70^\circ$
$m(B\hat{M}A) = 360 - (70 + 70 + 70 + 40 + 40) = 70^\circ$
$m(AMD) = 70 + 70 + 70 = 210$

A, M and D are not on the same straight line

9 in The opposite figure



Prove that

(1) $\triangle BAC \equiv \triangle DAC$

find (1) $m(\hat{D})$

(2) find length of $\overline{CD}$

Sol $\triangle BAC$, $\triangle DAC$

$AB = AD$

$m(D\hat{A}C) = m(B\hat{A}C)$

$\overline{AC}$ is a common side

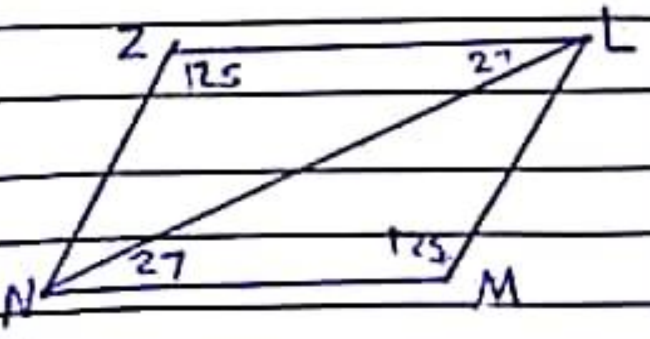
$\triangle BAC \equiv \triangle DAC$

and consequently

$m(\hat{D}) = m(\hat{B}) = 40°$

$CD = CB = 5cm$

10 in The opposite figure



Prove $\triangle LMN \equiv \triangle LNZ$

Then find $m(L\hat{N}Z)$

Sol

$m(M\hat{L}N) = 180° - (125° + 27°) = 28$

$m(L\hat{N}Z) = 180° - (125° + 27°) = 28$

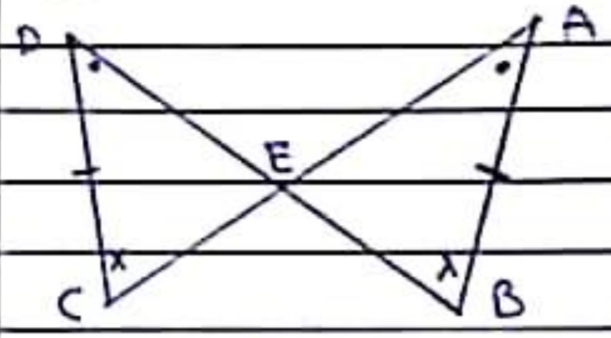
$m(Z\hat{L}N) = m(M\hat{N}L) = 27°$

$m(Z\hat{N}L) = m(M\hat{L}N) = 28$

$\overline{LN}$ is a common side

$\triangle LMN \equiv \triangle NZL$

11 in the opposite figure



IS $\triangle ABE \equiv \triangle DCE$

Sol $m(\hat{A}) = m(\hat{D})$

$m(\hat{B}) = m(\hat{C})$

$AB = DC$

$\triangle ABE \equiv \triangle DCE$

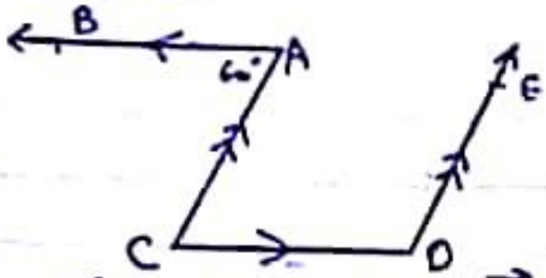
and consequently

$AE = DE$

$BE = CE$

$m(A\hat{E}B) = m(D\hat{E}C)$

16 in the opposite figure



$\overrightarrow{AB} \parallel \overrightarrow{CD}$, $\overline{CA}$, $\overline{DE}$

find $m(\hat{C})$, $m(\hat{D})$

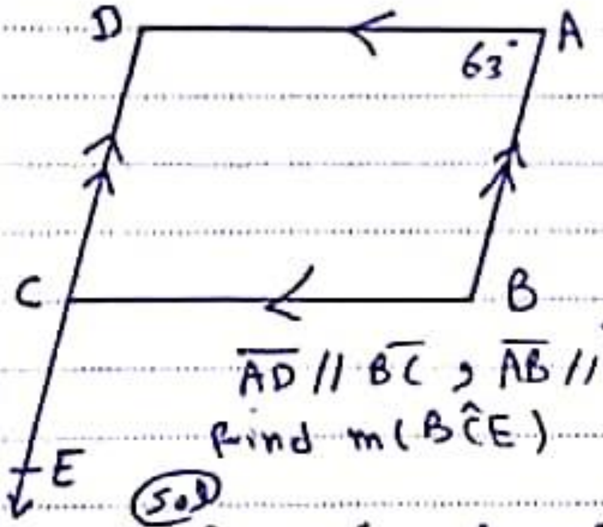
Sol

$m(\hat{C}) = m(\hat{A}) = 60°$ alternate

$m(\hat{D}) = 180° - 60° = 120°$

two interior angle in the same side of transversal

17 in the opposite figure



$\overline{AD} \parallel \overline{BC}$, $\overline{AB} \parallel \overrightarrow{DC}$

find $m(B\hat{C}E)$

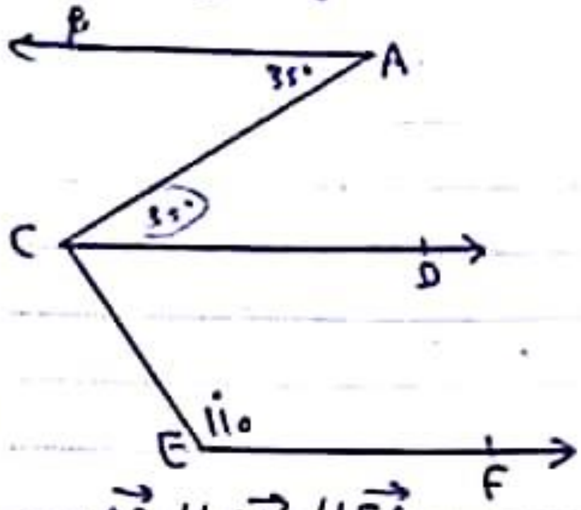
Sol

$m(\hat{D}) = 180° - 63° = 117°$

Two interior angle in the same side of transversal

$m(B\hat{C}E) = m(\hat{D}) = 117°$ corresponding

18 in the opposite figure



$\overrightarrow{AB} \parallel \overrightarrow{CD} \parallel \overrightarrow{EF}$

find $m(A\hat{C}E)$

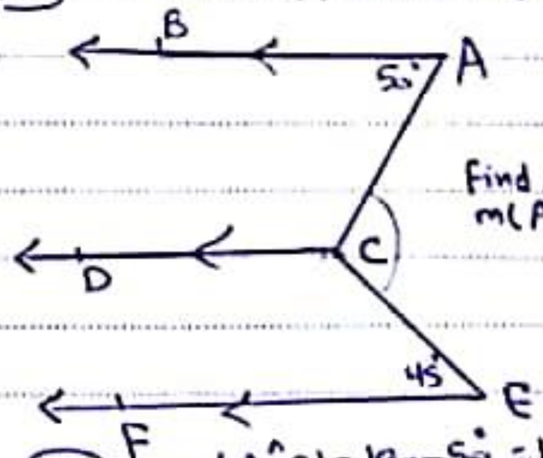
Sol $m(A\hat{C}D) = m(\hat{A}) = 35°$ alternate

$m(D\hat{C}E) = 180° - 110° = 70°$

two interior angle in the same side of transversal

$m(A\hat{C}E) = 35° + 70° = 105°$

19 in the opposite figure



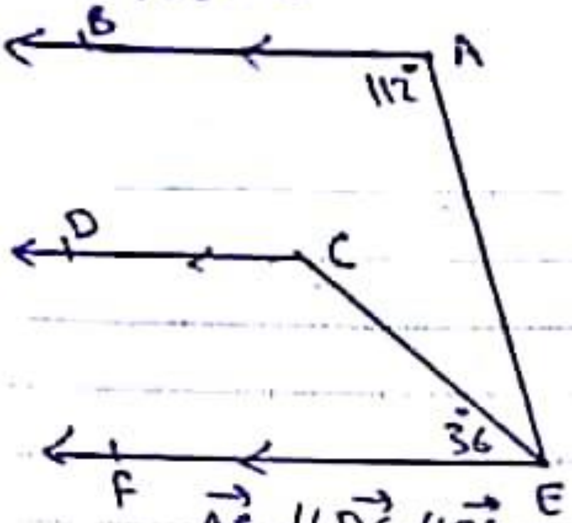
Find $m(A\hat{C}E)$

Sol $m(A\hat{C}D) = 180 - 50° = 130°$ two interior angles in the same side of trans

$m(D\hat{C}E) = 180 - 45° = 135°$ Two interior

$m(A\hat{C}E) = 360 - (130° + 135°) = 95$

20 in the opposite figure



$\overrightarrow{AB} \parallel \overrightarrow{DC} \parallel \overrightarrow{EF}$ find $m(\hat{C})$, $m(A\hat{E}C)$

Sol $m(\hat{C}) = 180° - 36° = 144°$ two interior angle in the same side of transversal

$m(A\hat{E}F) = 180° - 112$
$= 68°$ two interior angles in the same side of transversal

$m(A\hat{E}C) = 68 - 36 = 32°$

21 in the opposite figure



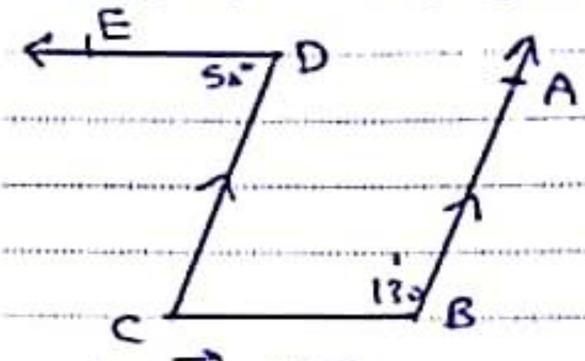
$\overrightarrow{BA} \parallel \overline{CD}$ is $\overrightarrow{DE} \parallel \overline{CB}$

Sol $m(\hat{C}) = m(\hat{B}) = 70°$ alternate

$m(\hat{C}) + m(C\hat{D}E)$
$= 70 + 110 = 180°$
Two interior angle in the same side of transversal

$\overrightarrow{DE} \parallel \overline{CB}$

22 in the opposite figure $\overrightarrow{BA} \parallel \overline{CD}$

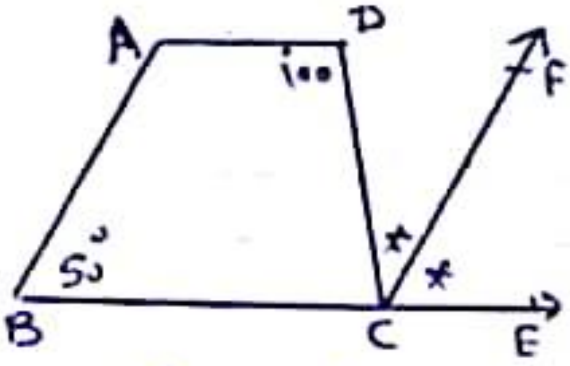


is $\overrightarrow{DE} \parallel \overline{CB}$

Sol
$m(\hat{C}) = 180° - 130° = 50°$
Two interior angle in the same side of trans

$m(\hat{D}) = m(\hat{C}) = 50°$
alternate position
$\overrightarrow{DE} \parallel \overline{CB}$

23 in The opposite figure



$\overrightarrow{AD} \parallel \overrightarrow{BC}$ is $\overrightarrow{CF} \parallel \overline{BA}$

Sol

$m(D\hat{C}E) = m(\hat{D}) = 100$ alternate

$m(F\hat{C}E) = \frac{100}{2} = 50°$

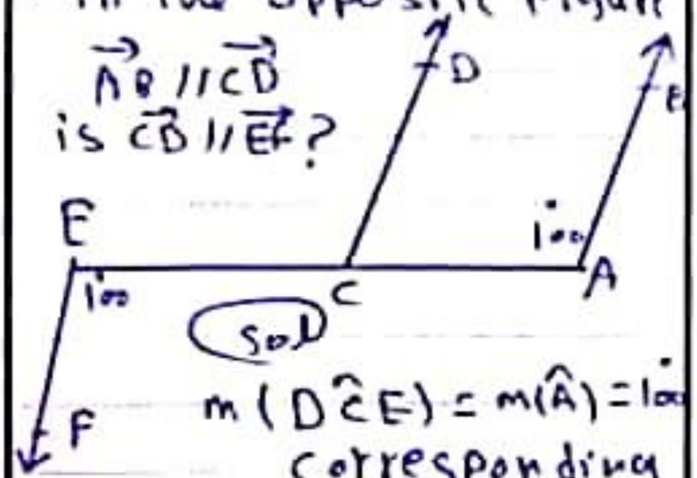
$m(F\hat{C}E) = m(\hat{B}) = 50°$ corresponding

$\overrightarrow{CF} \parallel BA$

24 in The opposite figure

$\overrightarrow{AB} \parallel \overrightarrow{CD}$

is $\overrightarrow{CB} \parallel \overrightarrow{EF}$?



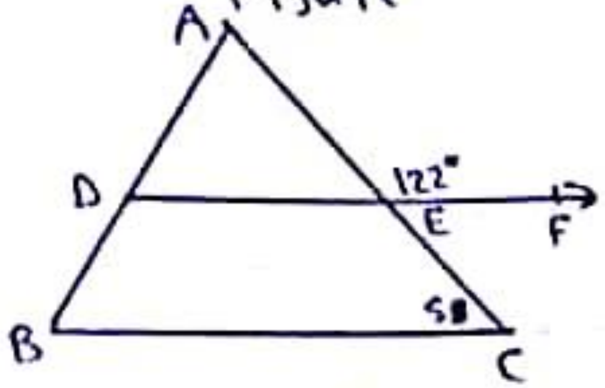
Sol

$m(D\hat{C}E) = m(\hat{A}) = 100$ corresponding

$m(D\hat{C}E) = m(\hat{E}) = 100°$ alternate

$\overrightarrow{CB} \parallel \overrightarrow{EF}$

25 in The opposite figure



is $\overrightarrow{DE} \parallel \overline{BC}$

Sol $m(A\hat{E}D) = 180 - 122°$
$= 58°$

$m(A\hat{E}D) = m(\hat{C}) = 58°$ corresponding

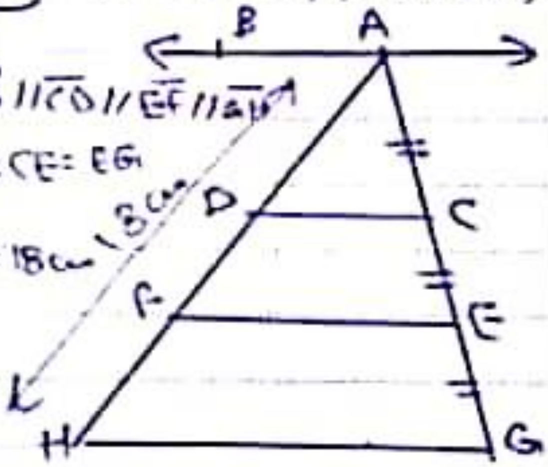
$\overrightarrow{DE} \parallel \overrightarrow{BC}$

26 in The opposite fig

$\overleftrightarrow{AB} \parallel \overline{CD} \parallel \overline{EF} \parallel \overline{GH}$

$AC = CE = EG$

$AH = 18$ cm



Find The length of $\overline{AF}$

Sol $\overleftrightarrow{AB} \parallel \overline{CD} \parallel \overline{EF} \parallel \overline{GH}$

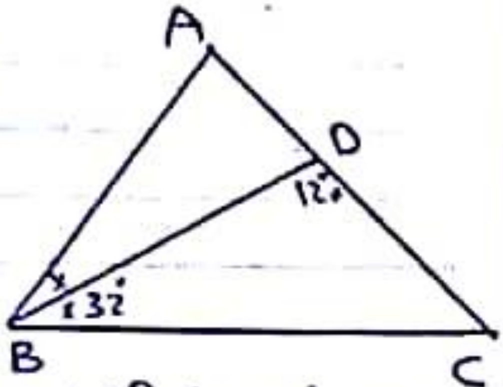
$AC = CE = EG$

$AD = DF = FH = \frac{18}{3} = 6$ cm

$AF = 6 + 6 = 12$ cm

(27) in the opposite figure

find $m(\hat{A})$



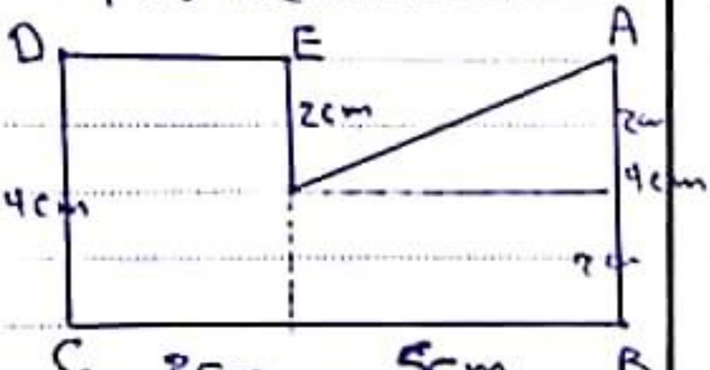
(Sol) $m(A\hat{D}C) = 180° - 120° = 60°$

$m(A\hat{B}D) = m(D\hat{B}C) = 32°$

in $\triangle ADB$

$m(\hat{A}) = 180° - (32° + 60°) = 88°$

(28) in the opposite figure



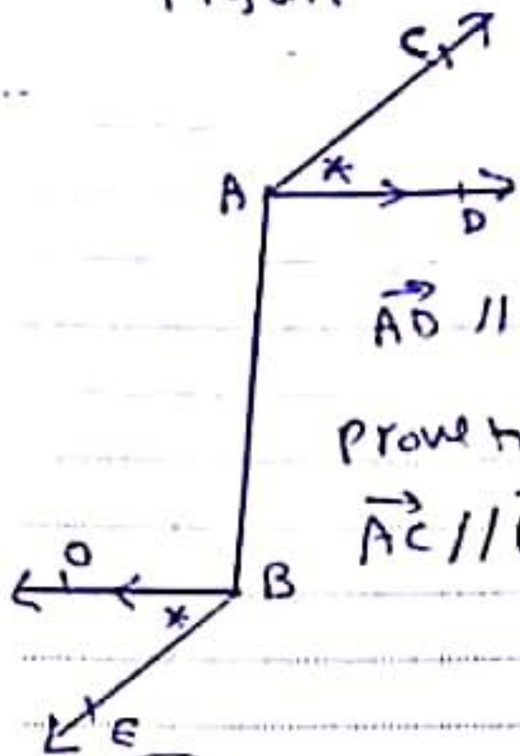
find the area of the figure

(Sol) Area = □ + □ + △

$= 3 \times 4 + 5 \times 2 + \frac{1}{2} \times 5 \times 2$

$= 12 + 10 + 5 = 27 cm^2$

(29) in the opposite figure



$\overrightarrow{AD} \parallel \overrightarrow{BO}$

prove that $\overrightarrow{AC} \parallel \overrightarrow{BE}$

(Sol)

$m(C\hat{A}D) = m(E\hat{B}O)$

$m(D\hat{A}B) = m(O\hat{B}A)$ alternate

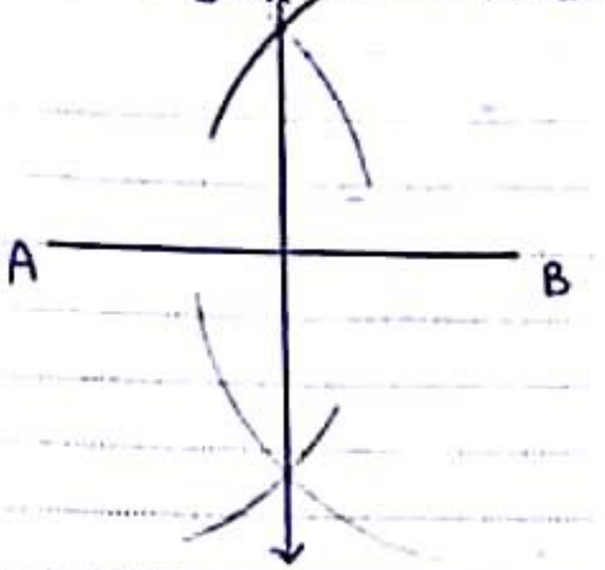
by adding

$m(C\hat{A}D) + m(B\hat{A}D) = m(E\hat{B}O) + m(O\hat{B}A)$

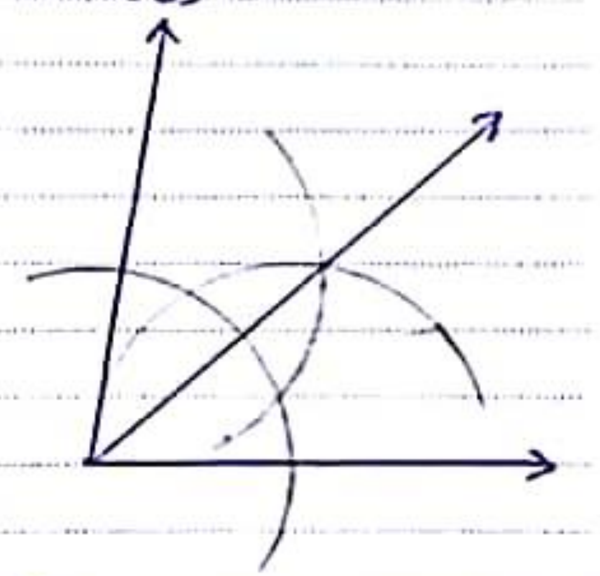
$m(C\hat{A}B) = m(E\hat{B}A)$ alternate

$\overrightarrow{AC} \parallel \overrightarrow{BE}$

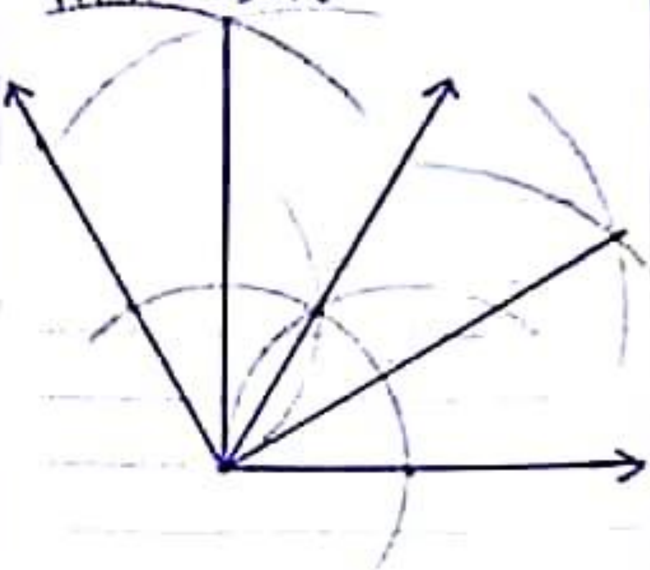
1) Draw AB = 6 cm Then bisect it using the geometric tools



2) Draw an angle of measure 80° Then bisect it using the geometric tools

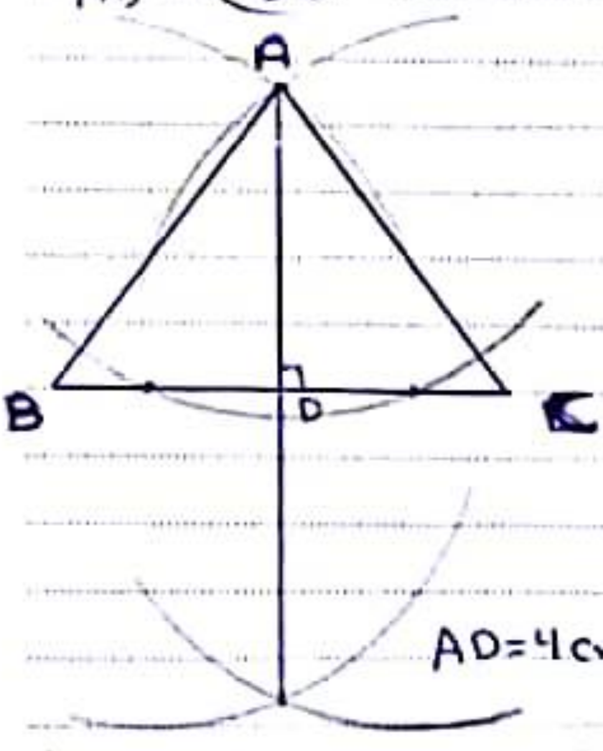


3) Draw an angle of measure 120° Then divide it into four angles equal in measure



4) Draw $\triangle ABC$ where $AB = AC = 5$ cm, $BC = 6$ cm. Draw $\overline{AD} \perp \overline{BC}$, $\overrightarrow{AD} \cap \overline{BC} = \{D\}$, find the length of $\overline{AD}$

(sol)



AD = 4 cm

Mr. HASSAN SALAMA 01141060113 / 01283914718

Final revision in maths prep(1) (Geometry)

[1] the angle: is a union of two rays have the same starting point

[2] the sum of measures of two complementary angles $= 90°$

[3] The sum of measures of two supplementary angles $= 180°$

[3] the measure of the straight angle $= 180°$ and the measure of the right angle $= 90°$

[4] the two adjacent angles formed by a straight line and a ray with a starting point on this straight line are supplementary

[5] The two outer sides of the two supplementary adjacent angles are on the same straight line

[6] if the two adjacent angles are not supplementary then their outer sides are not on the same straight line

[7] if the two adjacent angles are complementary then their outer sides are perpendicular

[8] the sum of measures of the accumulative angles at a point $= 360$ or 4 right angles

[9] The two adjacent angles in which the two outer sides on the same straight line are supplementary

10 If Two Straight lines intersect, then each Two vertically opposite angles are equal in measure

11 The acute angle is supplemented by an obtuse angle

12 The right angle is supplemented by a right angle

13 The Two bisectors of two adjacent supplementary are perpendicular

14 The bisector of angle is a ray divides the angle into Two angles equal in measure

15 Two line segment are congruent if they are equal in length

16 Two angles are congruent if they are equal in measure

17 Two Polygons of the same number of sides are congruent if
(1) all corresponding sides are equal in length
(2) all corresponding angles are equal in measure

18 Two triangles are congruent
(a) if Two sides and the included angle of the first Triangle are congruent Two their corresponding in the other triangle
(b) if two angles and the included side in the first Triangle congruent To Their corresponding in the other Triangle
(c) if each side of the first Triangle is congruent to its corresponding in the other triangle
(d) Two right angled Triangle are congruent if a hypotenuse and a side of the right angle congruent to their corresponding

(19) if a straight line intersect two parallel straight line then

(a) each two alternate angles are equal in measure

(b) each two corresponding angles are equal in measure

(c) each two interior angles in the same side of transversal are supplementary

(20) if a straight line intersect two straight lines and two alternate angles are equal in measure then two straight lines are parallel

(21) if a straight line intersect two straight lines and two corresponding angles are equal in measure then the two straight lines are parallel

(22) if a straight line intersect two straight lines and two interior angles in the same side of transversal are supplementary then the two straight lines are paralle

(23) each straight line is parallel to itself

(24) the two straight lines parallel to a third straight line are parallel

(25) the two straight lines perpindicular to a third straight lines are parallel

(26) if a straight line intersect one of two parallel straight line it intersect the other

(27) if a straight line is perpindicular to one of two parallel straight lines it is perpindicular to the other

28) if a parallel straight lines divide a straight line into segments of equal lengths than they divide any other straight line into segments equal in length.

29) The supplements of one angle are equal in measure

30) The complements of one angle are equal in measure

31) The complement of the acute angle is an acute angle and its supplement is obtuse

32) The complement of zero angle is right angle and its supplement is a straight angle

33) The axis of symmetry of a line segment is: a straight line perpindicular to it from its mid point

With my best wishes
Mr/hassan Salama